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Georgia Pacific/New York State Canal Corporation Site

2. Phase I Environmental Site Assessment

2.1 Site Location, Description, and Environmental Setting

The Georgia Pacific/New York State Canal Corporation (NYSCC) Final Candidate Site (FCS) is located in the Hudson-Mohawk Lowland physiographic province. The topography of this province has been produced primarily by erosion along outcrop belts of sedimentary rocks that lie between the Catskills and the metamorphosed shale hills of the Taconics. The province generally has low relief and elevation and is underlain by Ordovician shales that have been exposed by the erosion of Silurian and Devonian limestones (University of the State of New York 1966). The site comprises one parcel owned by Georgia Pacific. The NYSCC maintains an area along an existing bulkhead. Site photos are found in Appendix A.

The Georgia Pacific/NYSCC site is a 122.7-acre parcel located near the town of Greenwich, Washington County, New York (see Figure 2-1). This site is located on the east side of the Hudson River (at approximately river mile 183.2) and is owned by Georgia Pacific; however, it is not currently developed. The only portion of the site currently used is the bulkhead along the river, which is being used by NYSCC. Although the site is considered one parcel, it comprises a number of tracts. The site is situated near the Northumberland Dam, and there is a bulkhead along the shoreline to the north of the dam. A paper mill was previously located on the site; the former mill structures have been removed. During the site inspection on July 10, 2003, a canal formerly used for hydroelectric power generation was identified along the eastern edge of the riverside tract. This canal is currently blocked off from the river, and remnants of the power facility foundation are still present. The water present in the canal has resulted in wetland habitat.

A rail corridor runs onto the riverfront tract for 200 feet and south of the larger inland tract for 670 feet. The rail spurs are inactive and need refurbishing. In addition to the waterfront property, a large portion of the parcel is located on the site east of County Road 113. This tract contains a landfill in the western portion and native wooded upland, with streams in the eastern portion. A drainage ditch is present in the southwest portion of this tract. A creek runs along the western boundary of the former landfill and ultimately discharges to the Hudson River.

The site is surrounded by rural residential and vacant agricultural land. The site topography is relatively flat along the waterfront and hilly on the east side of County Road 113. Portions of the waterfront are open grassy areas, surrounded by wooded areas. Most of the area on the east side of County Road 113 is wooded except for the open areas containing the landfill. Access to the parcel is via County Road 113 and a series of dirt roads on the waterfront parcel. The eastern parcel is accessed via a dirt trail from County Road 113. There is direct river access, with river frontage extending approximately 1,295 feet above the dam, as well as 185 feet of dike and 350 feet of undeveloped land below the dam. Approximately 1,410 feet of shoreline below the dam is unnavigable because of the dam and shallow water. The water adjacent to the existing bulkhead is

approximately 10 feet deep. Rock outcrops were observed in the upland section of the eastern parcel and along the shoreline adjacent to bulkhead. Key site features are presented on Figure 2-1.

Although no surficial environmental concerns were identified at this site, several 55-gallon drums were found throughout the site: eleven drums were observed in the northwestern portion of the site along with several empty 1-gallon roof tar cans (see Appendix A photos). Approximately nine drums were found in the northeast portion of the site; two drums were found in the central portion of the western parcel, and several drums were found along the waterfront below the dam and in the southeast corner of the western parcel. In most cases the drums appeared to be empty. However, one drum in the northwest corner of the site contained a black grease-like substance (see Appendix A). The drums in the northwest corner of the site were removed by Basile Environmental Solutions (under contract to Georgic Pacific) during the Phase II investigation program.

2.2 Historical Use Information

The site is the location of a former paper mill operation that was purchased by Georgia Pacific approximately 20 years ago. Georgia Pacific reportedly did not operate the mill, but it did perform the site closure.

2.3 Summary of Previous Studies

In 1999, Apex Environmental, Inc., on behalf of Georgia Pacific, installed and sampled four bedrock wells and collected three subsurface soil samples. In reference to New York State Department of Environmental Conservation (NYSDEC) Spill No. 93-07610 (Apex 1999), the investigation focused on the southwest riverfront portion of the site bounded between the former power canal and the Hudson River. Three of the bedrock wells (APEX-2 through APEX-4) were installed at the north part of this riverfront area, and one well (APEX-1) was installed at the south end. Based on review of the well drilling logs for the four bedrock wells installed by Apex, overburden thickness at the riverfront of the Georgia Pacific/NYSCC site ranges between 13 and 22 feet below ground surface (bgs). The overburden was described as primarily sand and silt, with small amounts of fine gravel followed by inorganic clays overlying the shale bedrock. At one of the wells (APEX-2), a saturated fine sand layer was encountered between the clay and the bedrock. During well installation, water in the overburden was encountered between 10 and 15 feet bgs. Groundwater samples were collected from the four wells and were analyzed for volatile organic compounds (VOCs) and semivolatile organic compounds (SVOCs). At a later time, two soil borings were installed via hand auger next to wells APEX-1 and APEX-3, and subsurface soil samples were collected from the depth intervals that exhibited the highest photo-ionization detector (PID) readings during the well installations. Subsurface soil samples were also analyzed for VOCs and SVOCs. No VOCs or SVOCs were found in the bedrock groundwater samples. SVOCs were not detected in the subsurface soil samples, and four VOCs (toluene, xylenes, tert-butylbenzene, and n-butylbenzene) were detected in the soil sample collected adjacent to APEX-3 from the 1.5- to 2.0-foot depth interval. All four VOCs were detected at concentrations below the cleanup standards established in NYSDEC's Spill Technology and Remediation Series. Based on the results of this investigation, NYSDEC closed

NYS Spill No. 93-07610 in December 1999, and the four wells were decommissioned in September 2000.

According to the Georgia Pacific site representative interviewed during the July 2003 site inspection, the landfill on the inland tract has undergone closure. To date, the closure report has not been provided.

3. Phase II Investigation

3.1 Field Investigations

The initial phase of the environmental assessment consisted of collecting environmental and geotechnical samples. Results of the geotechnical sampling are provided in Section 4 of this report. Site photos are found in Appendix A. Boring logs and supplemental geotechnical information are found in Appendix B. Environmental samples were collected from surface soil, surface water, sediment, subsurface soil, and groundwater. Surface and subsurface soil samples were collected in drum disposal areas, surficial dumping areas, land farming areas, and areas of the site where construction operations would be expected to occur if the site were selected. Surface water and sediment samples were collected along present site runoff flow pathways and the former power-generating canal. Upgradient and downgradient groundwater samples were collected to provide an indication of overall environmental conditions.

All environmental field investigations were performed in accordance with the August 2003 *Hudson River PCBs Superfund Site Facility Siting Work Plan* (Ecology and Environment, Inc.) and the September 2003 addenda to that plan, the *Site-Specific Field Investigations of the Final Candidate Sites* (Ecology and Environment, Inc.). Investigations at this site were performed in September and October 2003. A summary of investigation activities is provided in Table 3.1-1.

Deviations from the Work Plan

The following deviations from the work plan occurred during the field program:

- Surface water sample GPS-SW1 was not collected because of dry conditions at the time of sampling.
- Surface soil sample GPS-SS11 was added to the program because of the presence of numerous drums (approximately 11) in the northwest corner of the site.

3.2 Environmental Sampling Program

3.2.1 Temporary Well Installation and Groundwater Flow

Eight temporary 1-inch polyvinyl chloride (PVC) wells were installed via direct push technologies (DPT). Well construction information is provided in Table 3.2-1. Before groundwater sampling, each temporary well was purged three times the volume of water standing in the casing or to dryness (whichever occurred first). Water quality parameters measured in the field during purging are presented in Table 3.2-2. Groundwater sample results are described below.

Groundwater elevations were measured from each temporary well upon well completion and at two separate times following completion of the sampling program. In addition, two surface water elevations were obtained from the Hudson River on the western boundary of the site and two surface water elevations were obtained from the power canal on the southern half of the site. The tops of each temporary well and surface water reference marks were surveyed so that an accurate elevation could be obtained. Table 3.2-3 summarizes the recorded elevations. Based on the limited information available from this study (8 wells spaced more than 300 feet apart), groundwater flow beneath the Georgia Pacific site appears to be to the west or southwest towards the Hudson River (see Figure 3-1).

3.2.2 Field Sampling and Surveying

The environmental investigations at this site included collecting eleven surface soil samples; four surface water and five sediment samples; subsurface soil sampling via direct push technologies (DPT) at eight locations; installation and sampling of eight temporary monitoring wells; three geotechnical soil borings, and installation of one stream gauge for hydrologic monitoring purposes. Table 3.2-4 summarizes the total number of field and quality assurance/quality control (QA/QC) samples collected and the parameters for which they were analyzed, and Figure 3-1 illustrates all environmental investigation locations. All sample locations and stream gauges were surveyed for both horizontal and vertical positions. Survey data is presented in Appendix C. All samples were collected in accordance with the project work plans. Field chemistry data recorded from surface water sample locations are presented in Table 3.2-2. Results from each sample medium are described below.

3.2.3 Data Usability

Soil, sediment, surface water, and groundwater samples were collected from various locations at each FCS (see Section 3.3). The samples were submitted to several environmental analytical laboratories for analytical testing as directed by EPA. Appendix D provides the complete analytical results, field quality control (QC) samples, and data qualification. The specific data usability concerns regarding each FCS are still under evaluation as part of a detailed review of the hard copy data assessment reports. The following is a summary of general information regarding data usability determined from the electronic data review.

Out of a total of 6,351 reported values, 901 values were qualified during the data validation process. The data points that were qualified as estimated, bias low, or non-detect are considered useable for the purposes of this project. A total of 6 values were flagged as unusable, resulting in a completeness of more than 99.9%. Further evaluation of the data will include determining potential limitations of other qualified data and the impact of rejected data. In general, potential data limitations for the site are minor, as noted below:

- Low levels of several volatiles and pesticides were flagged “U” as non-detected. The results were generally below the reporting limit and, therefore, the data qualification has no impact on the data usability.
- Data qualified as unusable are for compounds that are generally highly reactive and not typically found during site investigations.
- Field blanks, including trip blanks, rinseates, and field duplicates, were collected to be applicable to all FCSs. The results are summarized in Appendix D. The results demonstrate good overall sampling and analysis precision and no significant field contamination.
- The laboratory reported tentatively identified compounds (TICs) for volatile and semivolatile compounds on the hard copy data package. TIC values are reported as “NJ” with presumptive evidence that the compounds are present and concentrations are considered highly estimated. The TICs are being reviewed to determine any indications of significant contamination not identified by the results for the known target compounds.

3.3 Environmental Sample Results and Evaluation

State and federal standards, criteria, and guidances were used for preliminary screening purposes during review of the analytical sample results for surface soil, subsurface soil, surface water, sediment, and groundwater. Exceedances of the criteria (with the exception of metals) are noted in Table 3.3-1 by shading the values that exceeded the criteria.

Metals cannot be directly compared to the criteria without additional evaluation (including evaluation of background levels) because metals occur naturally in the environment. Additionally, turbidity in surface water and groundwater samples can cause interference with metals analysis. These factors were considered in the evaluation of the significance of detected compounds.

The criteria were selected based on a review of available EPA and New York State Department of Environmental Conservation (NYSDEC) standards, criteria, and guidances for the various media sampled. The applicability of these preliminary screening criteria to the FCSs will be determined as part of further evaluation by EPA in consultation with NYSDEC and the New York State Department of Health (NYSDOH).

The following discussion identifies the samples, by medium, with compounds exceeding the screening criteria. Those compounds without appropriate screening criteria also are identified. Where available, pertinent information for comparison purposes is provided.

Soil (Surface and Subsurface)

NYSDEC, *Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels* (1994) and subsequent amendments (December 20, 2000) (TAGM 4046). The recommended soil cleanup objectives and

typical eastern USA background concentrations for metals contained in TAGM 4046 were used as preliminary screening guidance for soil. Where specific guidance values were available for surface and subsurface soils (such as for polychlorinated biphenyls [PCBs]) they were applied based on the depth of the samples collected. TAGM 4046 assumes a total organic carbon (TOC) of 1%.

Surface Water

NYSDEC, *Technical and Operational Guidance Series (T.O.G.S. 1.1.1): Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (1998). These standards and guidance provide values for various water classes. Since the majority of the surface water samples were collected from unnamed ditches and ponded water areas at the site, the surface water samples collected are assumed to be Class D waters. Class D waters are best used for fishing. However, due to natural conditions such as intermittent flow, water conditions may not be conducive to fish propagation. Class C waters are considered conducive to fish propagation. Surface water standards and guidance values are calculated for some inorganics based on water hardness.

Sediment

NYSDEC, *Division of Fish, Wildlife and Marine Resources, Technical Guidance for Screening Contaminated Sediments* (1999). This guidance requires organic contaminants in sediments to be calculated based on sample TOC. TOC data were collected and used to calculate these screening values. Various criteria for bioaccumulation and acute and chronic toxicity are presented in this document for protection of human health, benthic aquatic life, and wildlife. The benthic aquatic life chronic toxicity protection level for sediment was selected as the preliminary screening value for all collected sediment samples.

Groundwater

NYSDEC, *Technical and Operational Guidance Series (T.O.G.S. 1.1.1): Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations* (1998) provides Class GA standards and guidance values. The *National Primary and Secondary Drinking Water Regulations, Current Drinking Water Standards* (2002) maximum contaminant levels (MCLs) were used for preliminary screening for groundwater samples collected from temporary wells.

3.3.1 Surface Soil

Volatile Organic Compounds (VOCs)

No VOCs that exceeded screening criteria were detected in the surface soil samples (see Table 3.3-1).

Semivolatile Organic Compounds (SVOCs)

Two SVOCs that do not have available screening criteria (carbazole and benzaldehyde) were detected in the surface soil (see Table 3.3-1). Exceedances of screening values occurred for 4-nitrophenol, benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, chrysene, and dibenzo(a,h)anthracene.

Pesticides

No pesticides above screening criteria were detected (see Table 3.3-1). The only pesticides detected for which there are no standards available are endrin aldehyde, endrin ketone, and methoxychlor. Pesticides were detected throughout the site at each surface soil sample except GPS-SS03, GPS-SS04, GPS-SS06, and GPS-SS09.

Herbicides

An herbicide with no screening criteria (2,4-D) was detected at GPS-SS10 (56.6 µg/kg); however, this detection was considered a false positive by the laboratory (see Table 3.3-1). There are no standards for herbicides.

PCBs

No PCBs that exceeded screening criteria were detected in the surface soil samples (see Table 3.3-1).

Hexane Extractable Materials (Total Petroleum Hydrocarbons [TPH])

TPH, which has no screening criteria, was detected at GPS-SS01 (drum area), GPS-SS10 (composite sample taken adjacent to the railroad), and GPS-SS11 (drum area) at concentrations of 1,500 mg/kg, 800 mg/kg, and 1,360 mg/kg, respectively (see Table 3.3-1).

Inorganics

Arsenic, beryllium, cadmium, chromium, copper, iron, lead, magnesium, nickel, zinc, and mercury were found above their screening values (see Table 3.3-1). Metals are naturally occurring constituents of soil that often exceed criteria. Most of the levels were within the eastern USA background range. However, four samples contained one or more metals that exceeded more than three times the highest level of the USA background range: copper, lead, and zinc in GPS-SS01 (drum area); zinc in GPS-SS02 (current bulkhead/former mill/fill area) and GPS-SS06; and arsenic, copper, lead, mercury, and zinc in GPS-SS05 (slag/fill area).

Low levels of cyanide were detected in samples GPS-SS01 through GPS-SS05 and GPS-SS08 at concentrations ranging from 0.18 mg/kg to 0.42 mg/kg (see Table 3.3-1). No screening values are available for this compound.

3.3.2 Subsurface Soil

VOCs

Acetone (520 µg/kg [J]) in GPS-GP01-SB (downgradient of the northwest drum area) at 10 to 12 feet below ground surface (bgs) was detected above criteria (see Table 3.3-2). Two VOCs detected do not have screening values: 2-butanone and cyclohexane. However, they were detected at levels below the method detection limits.

SVOCs

Benzo(a)anthracene (690 µg/kg), benzo(a)pyrene (940 µg/kg), chrysene (980 µg/kg), and dibenzo(a,h)anthracene (290 µg/kg [J]) were found above their screening levels at GPS-GP05-SB1 (see Table 3.3-2). Compounds detected without screening criteria were carbozole at 140 µg/kg (J) in GPS-GP05-SB1 (12 to 16 feet bgs) and benzaldehyde at 230 µg/kg (J) at GPS-GP05-SB2 (22 to 24 feet bgs), both below method detection limits.

Pesticides

No pesticides above screening criteria were detected (see Table 3.3-2). Methoxychlor, for which there is no standard, was detected below its method detection limit in GPS-GP05-SB1 (26 µg/kg[JN]) (see Table 3.3-2).

PCBs

No PCBs were detected in subsurface soil samples.

Inorganics

Arsenic, beryllium, calcium, chromium, copper, iron, magnesium, nickel, zinc, and mercury were found above their screening values in subsurface soil samples (see Table 3.3-2). Metals are naturally occurring constituents of soil that often exceed criteria. Most of the levels of these metals are within or very close to the eastern USA background range. However, mercury and zinc in GPS-SP05-GB1 (12 to 16 feet bgs) exceeded by more than 3 times the highest level of the range.

Very low levels of cyanide were detected at GPS-GP02 (0.31 mg/kg) and GPS-GP05-SB1 (0.21 mg/kg). No screening values are available for this compound.

3.3.3 Surface Water

VOCs

No VOCs were detected in the surface water.

SVOCs

No SVOCs above screening criteria were detected (see Table 3.3-3). Two SVOCs with no available screening criteria were detected in the surface water (see Table 3.3-3).

Benzaldehyde was detected in GPS-SW04 (3 µg/L [J]) and caprolactam was detected in GPS-SW04 (96 µg/L) and GPS-SW05 (39 µg/L).

Pesticides

No pesticides were detected in the surface water.

PCBs

Aroclor-1242 (1.1 µg/L [J]) was detected above its standard in the surface water in the former power canal at GPS-SW04 (see Table 3.3-3).

Anions

Chloride and sulfate were detected in all surface water samples (see Table 3.3-3). Chloride and sulfate concentrations vary, with the highest concentrations found in the power canal samples.

Inorganics

Iron and mercury were detected above their standards (see Table 3.3-3). Metals are naturally occurring constituents of surface water that often exceed criteria. Therefore, the presence of these metals is not of concern.

Hardness

Hardness concentrations ranged from 145 mg/L to 500 mg/L in the surface water samples.

3.3.4 Sediment**VOCs**

No VOCs with screening criteria were detected (see Table 3.3-4). Low levels of three VOCs with no screening values (1,1,2-trichloro-1,2,2-trifluoroethane, carbon disulfide, and methyl acetate) were detected in sediment samples (see Table 3.3-4). 1,1,2-trichloro-1,2,2-trifluoroethane is a Freon compound that may be present in the sample as a laboratory artifact. Therefore, the presence of this constituent is not of concern. Carbon disulfide (3 µg/kg [J]) and methyl acetate (10 µg/kg [J]) were detected at GPS-SE04, and methyl acetate (15,000 µg/kg [J]) was detected at GPS-SE05. Both of these sample locations are in the former power canal.

SVOCs

No SVOCs above screening criteria were detected (see Table 3.3-4). Compounds without screening criteria that were detected are acetophenone, benzaldehyde, benzo(b)fluoranthene, benzo(k)fluoranthene, chrysene, and di-n-octylphthalate (see Table 3.3-4). All of these compounds were detected below their method detection limit in GPS-SE05.

Pesticides

Beta-BHC was found above its standard at GPS-SE05 (19 R µg/kg); however, this value was rejected when validated (see Table 3.3-4).

PCBs

No PCBs that exceeded screening criteria were detected in the sediment samples (see Table 3.3-4).

Inorganics

Cadmium, chromium, copper, lead, manganese, nickel, zinc, and mercury were found above their screening values in the sediment samples (see Table 3.3-4). Metals are naturally occurring constituents that often exceed criteria. Only lead exceeded the severe effect criteria in GPS-SE05.

Cyanide was detected in one sediment sample (GPS-SE05) at 5.7 mg/kg.

Total Organic Carbon (TOC)

Total organic carbon concentrations ranged from 10,000 mg/kg to 110,000 mg/kg in the sediment samples.

3.3.5 Groundwater

VOCs

No VOCs that exceeded screening criteria were detected in the groundwater samples (see Table 3.3-5).

SVOCs

No SVOCs with screening criteria were detected (see Table 3.3-5). Caprolactam, which has no screening value, was detected in two wells: GPS-GP05 (280 µg/L) and GPS-GP08 (1,400 µg/L) (see Table 3.3-5).

Pesticides

No pesticides were detected in the groundwater samples.

PCBs

No PCBs were detected in the groundwater samples.

Inorganics

Iron, magnesium, manganese, and sodium were each detected in at least one well above NYSDEC and/or EPA screening values (see Table 3.3-5). These metals are naturally occurring constituents of groundwater that often exceed criteria. Therefore, the presence of these metals is not of concern.

4. Geotechnical Assessment

A subsurface field investigation was conducted at the Georgia Pacific site to obtain geotechnical information. The primary purpose of collecting this data was to determine if there are geotechnical limitations associated with the use of the site for a sediment processing/transfer facility. Data collection included:

- Review of available subsurface information from previous studies;
- Soil borings installation (which included logging the subsurface geology and obtaining standard penetration test [SPT] data); and
- Submitting soil samples for geotechnical testing.

Presented below is a summary of the site geologic and geotechnical data collected.

Subsurface soil investigation locations were selected to provide general coverage of the site. Additionally, locations were selected based on the possible presence of fill in areas that may be used to construct the sediment processing/transfer facility. Figure 3-1 shows the locations of three geotechnical boreholes, GPS-GT01 through GPS-GT03, installed during this study. At each boring location, a continuous vertical profile was developed from ground surface to a depth of approximately 26 feet below ground surface (bgs) in 2-foot increments. A 2-inch outer diameter (OD) by 24-inch long split spoon sampler was advanced through 4.25-inch inner diameter (ID) hollow stem augers to collect the samples. Standard penetration tests using the split spoon sampler were conducted per ASTM Method D1586-99. Blow count data was recorded on boring logs and is presented in Appendix B. Granular soil density and cohesive soil consistency were classified using SPT n-values, which are the sums of the blows recorded over the second and third 6-inch penetration intervals of the tests.

Soil samples from geotechnical borings were collected and submitted for Atterberg limits, particle size, and moisture content analysis. The overall goal of soil sample collection from geotechnical borings was to collect at least one soil sample from each prominent soil horizon encountered within the top 25 feet of overburden. A total of four geotechnical soil samples were collected. At two boreholes, one soil sample from each depth interval also was collected and submitted for moisture content testing, creating a continuous moisture profile from ground surface to the bottom of the boreholes. Particle size gradation curves and their respective analytical summary sheets, which also list Atterberg limit data and moisture content data, are presented in Appendix B.

In addition to the geotechnical borings, subsurface geology was also investigated at eight other locations (GPS-GP01 through GPS-GP08) during subsurface environmental soil investigation efforts. These soil investigation activities were conducted using direct-push technology (DPT); a 4-foot soil collection interval was used to collect a continuous soil profile from the ground surface to approximately 25 feet bgs. DPT soil boring logs are also presented in Appendix B.

The geotechnical and DPT subsurface soil data indicated that site overburden soils vary considerably across the site. Site SPT n-values ranged from 0 to 15, indicating that the density of granular soils is loose to moderately dense, and the consistency of cohesive soils are soft to very soft.

The site soil investigation indicated fill area containing ash, cinders, and wood shavings exists at the northwest site corner, adjacent to the Hudson River. Fill thickness varies from 5.5 feet bgs near the northwest site corner to 8 feet thick farther to the south. Clay silts, underlain by sands and silty sands, underlie the northern part of the fill area. This clay consistency is soft to very soft, based on SPT n-values of 3 or less. Very fine to coarse sands and gravels underlie the fill area farther to the south. Sandy silts and silty sands are found inland, off the fill area. Beneath the northern landfill area, alternating silty sand, clay silt, and silty clay overlie cohesive clay. In the middle of the northern end of the site, weathered shale was noted at split spoon refusal at a depth of 21 feet bgs.

A cinder/concrete fill area located in the central part of the site extends to a depth of approximately 3.5 feet bgs and is underlain by silts and very fine sands and silty sands. An ash-rich fill extending to a depth of approximately 9 feet bgs lies in the western portion of the site; silt and sandy gravel underlie this ash fill. The density of this granular matrix is classified as loose, based on SPT n-values of 5 and 6. Further inland, a sand/silt mixture extends to a depth of approximately 14 feet bgs. Auger refusal was encountered just below this depth in the borehole.

South of the former railroad spur, silt and gravel are underlain by sands, sandy gravels, and silty gravels to a depth of 22 feet bgs along the Hudson River. Shale was noted at split spoon refusal at a depth of approximately 18 feet bgs further inland. Near Route 113, a 2.5 foot-thick fill layer was found overlying a thin clay layer. Fill thickness increases to 14 feet at the southernmost part of the site, adjacent to the Hudson River. The fill was underlain by silts and sands, which extend to a depth of at least 25 feet at the southwestern site tip. These granular soils are moderately dense based on SPT n-values of 7 to 15 recorded during drilling near the western part of the abandoned railroad spur.

Site investigation data published by Apex Environmental (2000) indicated bedrock was encountered at a depth of 22 feet bgs at the southwestern corner of the site, adjacent to the Hudson River. At the northern end, they indicated bedrock at depths of 13 to 16 feet.

5. Utility Assessment

5.1 Preliminary Assessment

A preliminary utility assessment was completed as part of the site-specific field investigation of the FCS. Major site utilities identified on-site are shown on Figure 2-1. The assessment included the following steps:

- 1) Observations of site surface utilities such as overhead power or telephone lines, electrical transformers, manholes, sewer outfalls, and water hydrants were made.
- 2) Dig Safely New York (Dig Safe) was contacted as part of the utility clearance process before subsurface/intrusive work activities, including direct communication with various utility operators, as needed. Operators of on-site utilities provided information.
- 3) Available site maps were reviewed. Maps were obtained from various sources, including property owners.

It is anticipated that further utility assessments will be completed at the Recommended Sites. Further assessment may include contacting local municipal offices for information, opening manholes to determine flow paths, and dye testing. Further assessment may be conducted as part of the design evaluation process or during other additional investigation of Recommended Sites.

5.2 Findings and Observations

No major utilities were identified at the Georgia Pacific site. Overhead electrical power lines are located along Route 113, which is adjacent to the site.

6. Survey of Terrestrial, Archaeological, and Architectural Resources (STAAR)

Section 106 of the National Historic Preservation Act requires federal agencies to take into account the effect that facility siting may have on cultural resources that are listed or are eligible for listing on the National Register of Historic Places (NRHP). Phase IB field investigations continued the cultural resources studies and are specifically designed to determine the presence and extent of cultural resources within the Georgia Pacific/New York State Canal Corporation (NYSCC) site (see *Addenda to the Hudson River PCBs Superfund Site Facility Siting Work Plan: Site-Specific Field Investigations of the Final Candidate Sites*). Field activities involved archaeological, geomorphological, and architectural investigations.

6.1 Archaeological Investigation

Reconnaissance was conducted in July 2003 and fieldwork was conducted October 11, 13-18, 20-25, 27, and 28, 2003. Approximately 250 shovel test pits were excavated within the 64 acres of this site. This FCS was originally 122.7 acres. However, the General Electric design team indicated that approximately 60 acres to the east of the eastern parcel are not expected to be used for the sediment processing/transfer facility and therefore have been excluded from the investigation. During initial archaeological investigation and the excavation of the shovel test pits, the field crew encountered a textile membrane just below the surface on the parcel east of CR 113. It was then determined that this area had been used as a landfill. All field investigations within that area were terminated. It is not likely that further archaeological investigation will be recommended east of CR 113 due to the presence of the landfill. Review of the Georgia Pacific Report will help to assess the limits disturbance and determine archaeological sensitivity.

No prehistoric sites were found at this site. The site contains a large industrial archaeological site dating to the late nineteenth to early twentieth centuries. It includes the remains of industrial buildings, an electric hydropower plant, a sluiceway with two bridges, worker quarters, a docking facility, a parking lot and old roadbed, and an inter-urban railway. This complex appears to be functionally related to a dam spanning the Hudson River. Most or all of these features are related to former paper mills. These archaeological resources potentially constitute a historic district eligible for NRHP listing.

6.2 Geomorphological Investigation

This investigation was conducted on October 14, 16, and 20. Using backhoes, four trenches were excavated totaling 25 meters in length. Trench dimensions were all approximately 1.3 meters in depth and ranged from 4 to 10 meters in length. No cultural

features or artifacts were discovered in three of the trenches. Historical features and train tracks were discovered in the fourth trench.

Prehistoric Site Sensitivity

Because of the low topography (hence, flooding) of the site, it is doubtful that any soils or artifacts exhibiting prehistoric habitation could exist in any contextual integrity.

6.3 Architectural Assessment

Fieldwork was conducted during July 2003 and on October 14, 2003. Structures more than 50 years of age within the site include a manmade slip running through the western portion of the property, a docking and loading facility, and the remains of a stone bridge and sluiceway. Ruins associated with several early to mid-twentieth century paper mills, including a brick and stonewall and cut stone foundation located at the northern end of the sluiceway, are found within the western portion of the project area (see Section 6.2). An evaluation to determine if these resources contribute to a potentially eligible historic Hudson River landscape is ongoing. Approximately ten New York State Historic Resource Inventory (HRI) forms are being completed for this site.

The possibility for visual impacts on several potentially eligible pre-1950 structures across the river will need to be further examined. These include a number of residences and an intact nineteenth-century farm complex consisting of a farmhouse and numerous associated outbuildings that display a high degree of integrity. Also within the viewshed of the site, the Route 4 bridge, a potentially NRHP-eligible steel-truss bridge, is visible to the northwest. No HRI forms are being completed for these structures at the present time because they are not within or immediately adjacent to the site.

7. Wetland Assessment

7.1 Determination and Delineation Methods

Wetland determinations and delineations of the Georgia Pacific/New York State Canal Corporation (NYSCC) site on September 19 and October 8, 2003 followed the routine approach noted in the U.S. Army Corps of Engineers (USACE) 1987 *Wetland Delineation Manual*, as outlined in Section 3.6.2.2 of the *Hudson River PCBs Superfund Site Facility Siting Work Plans* (Master Work Plans) (Ecology and Environment, Inc. August 2003). Applicable data (e.g., soil surveys, National Wetland Inventory (NWI) mapping, etc.) were reviewed beforehand to provide background information (see the Master Work Plans, Section 3.6.2.1). Determination and delineation activities were limited to those areas previously identified as potential wetlands through data review (i.e., NWI and New York State Department of Environmental Conservation [NYSDEC] mapping) and previous site reconnaissance efforts.

The Georgia Pacific/NYSCC site can be divided into eastern (or inland) and western (or riverside) parcels. Structures from a former paper mill on the northern riverside tract site have been removed. A canal formerly used for hydroelectric power generation was identified along the eastern edge of the riverside tracts. Though retaining water, presumably from runoff, this canal is currently blocked off from the river.

7.2 Review of Existing Information

Review of NWI wetland mapping indicated the site contains approximately 3.2 acres of wetlands. The wetland areas along the northern portion of the riverside parcel are classified as PFO1Eh (palustrine, forested, broadleaved deciduous, seasonally flooded/saturated, diked/impounded). The mapped wetlands within the eastern parcel are classified as PSS1/UBFh (palustrine, scrub-shrub, broadleaved deciduous/unconsolidated bottom, semipermanently flooded, diked/impounded) and PFO1E (palustrine, forested, broadleaved deciduous, seasonally flooded/saturated). NYSDEC wetland mapping indicated that no NYSDEC wetlands were previously identified on the site.

Although NWI wetland maps identify the river along the shoreline of the site as a lacustrine wetland, sample plots and determinations along the shoreline were limited to areas that exhibited wetland characteristics and occurred above the ordinary high water mark. Determination and delineation efforts did not extend into the river.

The Washington County Soil Survey was reviewed to determine the soil types mapped on this site (U.S. Department of Agriculture 1974). The mapped soil types within the site boundaries are Hudson silt loam, Hudson soil steep and very steep, Rhinebeck silt loam, fluvaquents, and Madalin silty clay loam. Hudson silt loam is deep and moderately well drained. The steep and very steep variation of the Hudson series has the same soil profile but is found on steep slopes. Rhinebeck silt loam is deep and somewhat poorly drained. The water table in this series is typically found between 6 and 18 inches below the surface during the spring and wet periods. Madalin silty clay loam is deep and poorly drained. This soil is typically found in a location in the topography where it receives surface runoff from surrounding areas. Because of the poor drainage it has a tendency to ponding. The fluvaquent soils are found in the northern portion of the riverside parcel. This soil type consists of recently deposited unconsolidated alluvial material, ranging from gravel and sand to clay. It is typically found in floodplains where it is exposed to frequent flooding and further deposition. Drainage is generally poor to very poor, although excessive drainage can be found in some areas.

7.3 Results of the Wetland Assessment

Field determination procedures resulted in the delineation of approximately 6.54 acres of wetland (see Table 7-1). A number of observation plots were completed, which led to the determination and delineation of three wetland areas representing four wetland community types (Figure 7-1). Topographic variability, position within the landscape, proximity to the river, and prior disturbance (i.e., filling, dumping) activities are the predominant factors influencing the extent of wetland boundaries on site. The results of the field investigations represent an increase in the overall acreage of wetlands compared to the NWI mapping. The estimated wetland acreage based on the NWI mapping was approximately 3.2 acres. Site wetland labels correspond to given wetland observation plot numbers.

Table 7-1 Wetland Delineation Summary

Wetland ID	Community Type	Acreage
GP/NYSCC (1)	PFO/PEM/PSS/PUB	3.37
GP/NYSCC (2)	PFO	2.08
GP/NYSCC (3)	PEM/PUB	1.09
Total Acreage		6.54

Key:

PEM = Palustrine, emergent.

PFO = Palustrine, forested.

PSS = Palustrine, scrub-shrub.

PUB = Palustrine, unconsolidated bottom.

Field observations of wetland GP/NYSCC (1) (which corresponds to observation plots GP/NYSCC-1, 3, and 5), a large system (approximately 3.4 acres) comprising several distinct wetland types, were made around the entire extent of this wetland. The northern portion of the wetland is largely forested (PFO). An emergent (PEM) fringe is present along the western edge of the forested wetland, which is adjacent to a residential area. Some disturbance related to trail-clearing was noted here. A large open water area (PUB) comprises the center, or basin, throughout this wetland complex. The presence of this water appears to be semi-permanent, with water levels closely related to prolonged precipitation events and storm water runoff from surrounding areas. During seasons of more frequent and prolonged precipitation, it appears that there is standing water most of the time. In drier months, open water areas recede, creating mudflats. This condition is variable based upon storm events. For instance, field observations conducted on September 18, 2003 indicated scattered, small, shallow pools of water within the basin area. However, on October 8, 2003, the entire basin was inundated after two days of rainfall. A forested/scrub-shrub (PFO/PSS) community is located along the fringe of the open water area. Wetland hydrology appears to be perpetuated by inputs from a drainage channel to the east, overland flow from a shallow channel to the north, and storm water runoff from the surrounding upland areas (see Figure 7-1).

Dominant trees species in the forested wetland areas included green ash (*Fraxinus pennsylvanica*), silver maple (*Acer saccharinum*), and northern cottonwood (*Populus deltoides*). Other tree species included black willow (*Salix nigra*), American elm (*Ulmus americana*), stiff dogwood (*Cornus foemina*), and silky dogwood (*Cornus amomum*). The herbaceous layer consisted of sensitive fern (*Onoclea sensibilis*), spotted jewelweed (*Impatiens capensis*), marshpepper smartweed (*Polygonum hydropiper*), false nettle (*Boehmeria cylindrica*), and *Carex* spp. The emergent fringe portion was dominated by spotted jewelweed with some sensitive fern and arrow-leaf tearthumb (*Polygonum sagittatum*) also present. Herbaceous species within the open water/emergent component included those mentioned above and broadleaf cattail (*Typha latifolia*), reed canary grass (*Phalaris arundinacea*), woolgrass (*Scirpus cyperinus*), Pennsylvania smartweed (*Polygonum pennsylvanicum*), hop sedge (*Carex lupulina*), Devil's begger-ticks (*Bidens frondosa*), rice cutgrass (*Leersia oryzoides*), *Osmunda* spp., and giant goldenrod (*Solidago gigantea*). Cattail was dominant along the open water edge. The shrub and tree species in the scrub-shrub/forested fringe of this area included buttonbush (*Cephalanthus*

occidentalis), black willow (*Salix nigra*), silky dogwood (*Cornus amomum*), stiff dogwood (*Cornus foemina*), and brookside alder (*Alnus serrulata*).

A PFO1E (palustrine, forested, broadleaved deciduous, seasonally flooded/saturated) wetland was mapped in the southwest corner of wetland GP/NYSCC (1). The field investigation showed this area to be upland within the site boundary, with the exception of the westernmost portion that borders GP/NYSCC (1). Species within the upland area include woodfern (*Dryopteris spinulosa*), blackberry (*rubus* spp.), black cherry (*Prunus serotina*), Morrow's honeysuckle (*Lonicera morrowii*), and red oak (*Quercus rubra*).

Wetland GP/NYSCC (2) (corresponds to observation plot GP/NYSCC-7) is located along the northern boundary of the riverside parcel. A portion of this area was mapped on the NWI map as a PFO1Eh wetland. As previously mapped by NWI, 1.26 acres of the wetland were within the site boundary. Field-delineation activities resulted in an increase in wetland area by an additional 0.82 acre of wetland. This area is close to the river in elevation and is frequently flooded. Soils were typical of floodplain deposition areas, varying from coarse sand deposits to a more silty sand mixture with a clay sublayer. Farther inland there were some upland "hummocks" composed of well-drained coarse sand deposits. The wetland was dominated by a nearly monotypic stand of silver maple with some interspersed silky dogwood shrub stands along the fringe and in the western portion near the road. Close to the river there was little herbaceous vegetation. False nettle and spotted jewelweed were dominant in the herbaceous layer in the eastern portion of the wetland.

Field observations indicated the presence of aquatic bed wetland areas within the river channel to the west and north of the forested wetland. However, delineation procedures did not involve the mapping and boundary identification of wetlands within the river channel.

The relict hydroelectric canal is identified as wetland GP/NYSCC (3) (corresponds to observation plot GP/NYSCC-9). Approximately 1.09 acres of the canal contained emergent wetland vegetation or were open water at the time of the survey. The canal is deeply dug and bounded by nearly vertical slopes on the east and west. During field observations the water was approximately 20 feet below the surrounding ground level. There is no obvious surface connection to the river either in the north or south. Large concrete walls block the northern portion of the canal, and the former outfall in the south has been filled with gravel and stone. The extent of water cover is approximately several hundred feet north of the southern terminus. Water levels in the canal may be influenced by river stage and the resulting effects on the underlying water table and overland runoff into the canal. Small emergent pockets were visible on the sides of the channel and in areas where tree snags had formed small mounds. The dominant emergent vegetation was broadleaf cattail and purple loosestrife (*Lythrum salicaria*). During surveys earlier in the year, water levels were high and no emergent vegetation was observed. The open water areas were covered by a dense mat of duckweed (*Lemna minor*).

NWI mapping showed approximately 3.2 acres of wetland on the NYSCC site, excluding the lacustrine wetland along the canal. During the field investigation three wetland complexes encompassing 6.54 acres were delineated at this site. Minimal recent disturbance was noted. The 1.09-acre wetland within the canal on the Georgia Pacific property appears to be an isolated instance resulting from the damming that has occurred at both the north and south ends of the canal.

8. Floodplain Assessment

An initial floodplain assessment was conducted on the Georgia Pacific/NYSCC site in order to determine the presence, extent, and orientation of Federal Emergency Management Agency (FEMA)-mapped floodplains within site boundaries. Flood magnitudes and historic river stages from gauging stations as close as available to the site were examined to obtain an initial sense of the characteristics of on-site flooding. Appendix E provides the methodology and assumptions involved in this assessment.

8.1 Location and Orientation of the Floodplain

Figure 8-1 shows that portions of the Georgia Pacific/NYSCC site are located within the 100-year and 500-year floodplains. The floodplain areas were obtained from Flood Hazard Boundary Maps and the Town of Greenwich Flood Insurance Study (March 1992) from FEMA's Federal Insurance Administration.

The site is located on the east side of the Hudson River, in the Town of Greenwich. The total area of the site is approximately 122.7 acres (see Table 8-1). Approximately 11.3% (13.8 acres) of the total area of the site is within the base (100-year) floodplain. River frontage is estimated to be 3,700 feet.

The site comprises several non-contiguous land parcels, some of which are divided by a road (County Road 113) right-of-way and railroad parcels. The FEMA mapping indicates that the floodplain is located in several distinct locations within the riverside parcels, rather than a broad continuous floodplain. Areas within the 100-year floodplain include locations directly adjacent to the river and downstream of the Northumberland Dam (formerly the Thomson Dam); an area to the north end of the site near Thomson Road; a narrow, low-lying strip of land (i.e., the relict hydropower sluiceway associated with the former paper mill operations); and land adjacent to a tributary on the southeast corner of the site. The greatest width of the floodplain within the site is 450 feet.

Table 8-1 Summary of Georgia Pacific/NYSCC Site and Floodplain Characteristics

Is a portion of the site in the base (100-year) floodplain?	Yes
Total area of the site	122.7 acres (5,343,426 ft ²)
Area of the site within base (100-year) floodplain	13.8 acres (602,066 ft ²)
Percentage of the site within the base (100-year) floodplain	11.3%
Perimeter of the site (total length)	22,230 ft
Perimeter of the site bordering Hudson River (river frontage)	~3,700 ft
Greatest width between the outer boundary of the base floodplain and the Hudson River boundary	~450 ft

8.2 100-year Flood

The FEMA maps show the 100-year flood elevation at the site to be between 102 feet National Geodetic Vertical Datum (NGVD) at the southern end (below the Northumberland Dam) and 110 feet NGVD at the northern end. A brief examination of site topography and the FEMA mapping suggests that site elevation characteristics have not changed significantly since the FEMA floodplain modeling and mapping occurred.

The closest upstream gauge station is in Fort Edward, approximately 11 miles upstream of the site. The National Weather Service flood stage at the Fort Edward gauge station is 127 feet. At 127 feet NGVD, water floods River Road in Northumberland, reaches camps in Lake Luzerne, and may result in flooding in Stillwater (National Weather Service Advanced Hydrologic Prediction Service, <http://ahps.erh.noaa.gov/cgi-bin/ahps.cgi?aly&Hudson%20River>). The Stillwater gauge station is approximately 14 miles downstream of this site.

Flood magnitudes were calculated using statistical methods from the twenty-six years of flow data at the gauge station after the Fort Edward dam was removed. Based on this data, the 100-year flood stream flow is 47,772 cubic feet per second (cfs). A flood of this magnitude has not occurred in the twenty-six years of modern data. In that time, there have been two flow events greater than 10-year floods (May 3, 1983 and January 10, 1998).

Flood magnitudes were also calculated from twenty-six years of flow data at the Stillwater gauge station. Based on this data, the 100-year flood stream flow for this station is 60,258 cfs. A flood of this magnitude has not occurred in the twenty-six years of modern data. In that time, there have been two flow events greater than 10-year floods (March 15, 1977 and May 4, 1983).

8.3 Local Flooding

Historic water level data (1916 to 2000) are available from NYSCC Lock 5. Lock 5 is close to the site (less than 1 mile downstream) and is separated from the main channel of the Hudson River as a bypass of the Northumberland Dam. Lock 5 water level data is likely to be comparable to water level data for the northern portion of the site because of

similar water stage characteristics. Lock 5 water level data is not comparable to water level data for the southern portion because the water levels are different due to the fall in elevation below Northumberland Dam. The highest water level at the upstream side of Lock 5 was 107.97 feet NGVD (December 6, 1918). Based on NYSCC data, the 100-year flood elevation for this site was never reached at the northern end (110 feet) between 1916 and 2000.

Spot elevations surveyed near the river-land edge of the site, upstream of the Northumberland Dam, ranged from 102.07 feet to 102.23 feet. The elevation at the top of the bulkhead is 107.83 feet. The contour information (5-foot intervals) provided with 2002 aerial photography of the site shows a 105-foot contour line along the edge of the river upstream of the Northumberland Dam. Therefore, the 100-year flood would put the river frontage in the northern portion of the site under approximately 8 feet of water.

While the probability of an 8-foot inundation event (100-year flood) is remote, the NYSCC water level data on the upstream side of Lock 5 provide evidence that flooding on a smaller scale likely occurs almost annually at this site. The northern shoreline boundary would have been under approximately 6 feet of water during the maximum high water level on December 16, 1918 and under an average of 3.7 feet of water during each year's maximum flow. Site observations suggested that flooding does occur with some regularity within the forested area at the northern extreme of the site boundary.

The 10-year flood stage for the downstream portion of the site (below Northumberland Dam) is 97.5 to 98.5 feet NGVD, while it is 108 to 109 feet NGVD for the upstream portion of the site (above Northumberland Dam).

The Flood Insurance Study notes that "flooding can occur in the community during all seasons, but generally the most notable floods have occurred between the months of February and April, when snowmelt adds to heavy spring rains to produce increased runoff."

9. Coastal Management Area Assessment

The Georgia Pacific/NYSCC site is not located in the state-designated coastal zone. Therefore no direct impacts are expected as a result of the potential use of this site. EPA will prepare an additional phase of its coastal zone consistency assessment and subsequent coastal zone consistency determination, covering potential indirect and cumulative impacts from the operation of sediment processing/transfer facilities, once the Phase 1 and Phase 2 dredging facility locations are selected.

10. Baseline Habitat and Threatened and Endangered Species Assessment

10.1 Site Habitat Description

The Georgia Pacific site description is presented in the *Addenda to the Hudson River PCBs Superfund Site Facility Siting Work Plans: Site-Specific Field Investigations of the*

Final Candidate Sites (Ecology and Environment, Inc. September 2003). The site is situated on the east side of the river, encompassing areas both above and below the Northumberland Dam. This site was formerly a paper mill site and has been disturbed by past industrial uses, including the construction of a landfill (eastern parcel) and the use of certain areas for land-farming. These disturbances have greatly influenced the availability, extent, and diversity of on-site habitats. The former paper mill facilities have been removed, except for some concrete foundations. The site contains a bulkhead on the northern end, which is still occasionally used by NYSCC. Habitats largely comprise mid-successional (20 to 60 years) vegetation communities across the site. Several areas of late successional communities (greater than 60 years) are along the northern shoreline and early successional communities are in some of the areas that formerly were developed for industrial purposes.

Figure 10-1 shows the habitat community types, as defined by Edinger et al. (2002) that occur on the site. Field investigations were conducted on September 19 and October 8, 2003 to determine habitat availability within the site and to provide descriptions of existing habitat structure, diversity, and condition. Nineteen community types are found on this 71-acre site. No significant or unique habitats were among them. The predominant communities (relative to total cover across the site) are briefly described below. A description of the different community types from Edinger et al. is presented in Appendix F.

Successional Northern Hardwood

The successional northern hardwood community (SNH) accounts for 46% of the site and is the dominant community type. On the northern end of the site, the SNH is dominated by cottonwood, sumac, and elms but also contains a number of older, large black willows, red oaks, and silver maples. The SNH community in the vicinity of the wetland complex on the inland (eastern) parcel includes black cherry, white ash, black willow, Northern red oak, red maple, and cottonwood, which dominates the border areas. Along the roadside portions of the SNHs are several large red oaks, silver maples, and cottonwoods. Silver maple, elms, and black locust trees characterize the northern portion of the SNH on the waterfront parcel. Undergrowth in the shrub and herb layers is scattered and sparse. The southern end of SNH in the waterfront parcel is dominated by silver maple and cottonwood, with lower densities of box elder and quaking aspen. Portions of the SNHs are also dominated by young (1- to 6-inch diameter at breast height [dbh]) elm stands with occasional cottonwoods on the edges and relatively no shrub layer. Herbs include sedges, asters, snakeweed, poison ivy, and small honeysuckles in these locations.

The predominant species within the SNH shrub layer is honeysuckle. In some locations the shrub layer is dominated by dogwoods with lesser cover of honeysuckle, sumac, sugar maple, crabapples, Northern red cedar, Eastern white pine, and white oak. The predominant shrubs, herbs, and vines include wild grape, Virginia Creeper, wood fern, garlic mustard, moss, goldenrods, jewelweed, and blackberry. One small patch of the invasive, nonnative Japanese knotweed is found in the southeast section of the inland

parcel. The knotweed is growing in an understory of cottonwoods along the slope of a depression in the forest floor.

Successional Old Field

Successional old field (SOF) accounts for 15% of the site. Tree growth is occasional and scattered within this community type. Species include cottonwood, black willow, Eastern white pine, quaking aspen, and box elder. Shrubs include gray and silky dogwoods and an occasional multi-flora rose. The herb layer includes species such as goldenrod, sedges, birdsfoot trefoil, milkweed, asters, Queen Anne's lace, honeysuckle, and some cattail within a ditch. The southern area of the SOF is dominated by spotted knapweed, asters, fleabane, yarrow, deer-tongue grass, and evening primrose. Low densities of paper birch, cottonwood, quaking aspen, and sumac were scattered throughout the community. The edges of the SOF along the shoreline contain a narrow row of scattered box elder, cottonwood, paper birch, elm, sumac, and silver maple.

Successional Shrubland

Cottonwood, quaking aspen, sumac, and occasional dogwoods characterize the successional shrubland (SS) community, which accounts for approximately 4% of site. The herbaceous layer contains plants characteristic of the adjacent SOF communities. Portions of the site were classified as either SOF/SS or SNH/SS (6% and 5% of the site, respectively). These latter communities exhibit characteristics of both the associated community types, described above.

Other Communities

The areas in the vicinity of the bulkheads are actively influenced by man and contain mowed lawn and unpaved road. Another portion along the southern end has remnant concrete foundations of exterior rural structures. A remnant canal traverses the waterfront parcels.

Three other forested community types are present in low abundance, including Appalachian oak-hickory forest (AOF), small pine/spruce plantations (PSP), and Appalachian oak pine (AOP). A small patch of AOF is located in the northeast corner of the inland parcel. This forest patch appears to be remnant forest and is dominated by medium to large (8- to 14-inch dbh) shagbark hickory trees and some smaller white oaks. The PSP on the southern end of the site contains Norway spruce and red pine. Some of these trees were quite large (> 2 foot dbh). There is virtually no shrub layer and the herbaceous layer contained low densities of blackberries. A small remnant patch of AOP forest is along the southwestern shoreline. This area is dominated by Northern red oak, with lower densities of Eastern white pine. Honeysuckle and dogwoods dominate the shrub layer. The predominant herbs include asters and goldenrods.

Aquatic communities on-site include backwater slough and canal. The large wetland complex within the eastern portion of the site may exhibit aquatic community functions due to the relative permanence of water within the complex. (Wetland communities are discussed in further detail in Section 7 of this report.) The backwater slough is a shallow bay, which is connected to the Hudson River. The canal exhibited characteristics of an

emergent wetland and was covered with duckweed during the field visit. The northern Hudson River shoreline portion of the site is characterized by a shallow, sand/gravel substrate-dominated shoreline with shallow water depths extending out past 10 yards. Mussel shells and live mussels were observed along the northern shoreline, above the dam. Mussel species identification was not confirmed but may have been the eastern pondmussel, which is not protected in New York State. Mature trees extend to the shoreline and some root systems protrude out into the river. Trees include box elder, silver maple, and large (> 700 mm) cottonwoods and black willows. Low densities of honeysuckle dominate the shrub layer, and garlic mustard, wood fern, and jewelweed dominate the herbaceous layer. The bulkhead portions of the shoreline are either deep (> 6 feet) off the shoreline or have exposed bedrock extending to a silty, mucky substrate.

The site also contains a subterranean community type in the terrestrial cultural subsystem. The mine/artificial community is located at the south edge of the site at the base of the brick retaining wall. The artificial cave appears to be a remnant of a former hydropower plant outfall to the Hudson River. The base of the artificial cave is at the level of the Hudson River. The cave dimensions were approximately 18 feet in width and more than 200 feet in length. No signs of bat activity were apparent. The cave walls and ceilings had numerous small compartments and ledges for roosting areas, but daylight extends into more than half of the cave, which may prohibit use by bats. Several pigeons were observed roosting in the cave.

Common vegetation species and the community structure of the site influence wildlife occurrences. The availability of forested, shrubland, and old field communities provides a diverse habitat for wildlife species. Incidental wildlife observations included whitetail deer, raccoon tracks, Eastern gray squirrel, treefrog, green frog, Eastern phoebe, song sparrow, mallard, gray catbird, yellow warbler, pigeons, blue jay, sand piper, green heron, and great blue heron.

10.2 Endangered Species Act Issues

Correspondence with the U.S. Fish and Wildlife Service and NYSDEC indicate that there are no threatened or endangered species issues associated with this site. Wintering bald eagles may migrate through the area but are not known to use the site. A biological assessment will be prepared that will examine the potential impacts associated with the construction and operation of a sediment processing/transfer facility for each of the Suitable Sites.

Table 3.1-1 Summary of Activities, Hudson River PCBs Superfund Site

		Energy Park/Longe/ NYS Canal Corporation Site	Old Moreau Dredge Spoils Area/NYS Canal Corporation Site	Georgia Pacific/ NYS Canal Corporation Site	NYS Canal Corporation/ Allco/Leyerle Site	Bruno/Brickyard Associates/ Alonzo Site	State of New York/First Rensselaer/ Marine Management Site	OG Real Estate Site
Environmental Investigation	Environmental Sampling	09/29/03 - 09/30/03	09/30/03 - 10/01/03	10/08/03 - 10/09/03	10/01/03 - 10/03/03	10/03/03 - 10/07/03	10/08/03	10/07/03
	Temporary Well Installation	09/29/03 - 10/01/03	10/02/03	10/08/03	10/09/03	10/09/03 - 10/10/03	10/03/03 - 10/06/03	10/07/03
	Temporary Well Sampling	10/16/03	10/14/03 - 10/16/03	10/13/03 - 10/14/03	10/15/03	10/15/03 - 10/16/03	10/10/03 - 10/15/03	10/15/03
	Surveying	10/01/03 - 11/11/03	10/08/03 - 11/11/03	10/09/03 - 10/29/03	10/21/03 - 10/31/03	10/15/03 - 10/29/03	10/21/03 - 11/10/03	11/11/03 - 11/13/03
	Geotechnical Investigation	09/29/03 - 10/01/03	NA	10/08/03	10/07/03 - 10/09/03	10/09/03 - 10/10/03	10/03/03 - 10/06/03	NA
	Utilities Assessment	09/29/03 - 09/30/03	09/30/03 - 10/01/03	10/08/03 - 10/09/03	10/01/03 - 10/03/03	10/03/03 - 10/07/03	10/08/03	10/07/03
	STAAR	10/06/03 - 10/16/03	10/13/03 - 10/30/03	10/11/03 - 10/28/03	10/23/03 - 11/13/03	10/17/03 - 11/05/03	10/25/03 - 11/14/03	11/15/03
	Wetland Assessment	09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
	Floodplain Assessment	09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
	Coastal Management Areas	09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
	Baseline Habitat Assessment	09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
	Threatened and Endangered Species Assessment	09/17/03 - 09/18/03	09/17/03 - 09/18/03	09/19/03 - 10/08/03	10/07/03 - 10/10/03	10/14/03 - 10/15/03	10/13/03	10/15/03
	IDW Disposal	TBD	TBD	TBD	TBD	TBD	TBD	TBD

Key:

- IDW = Investigation-derived waste.
- NYS = New York State.
- PCBs = Polychlorinated biphenyls.
- STAAR = Survey of Terrestrial Archaeological and Architectural Resources
- TBD = To be determined.

Table 3.2-1 Summary of Temporary Well Construction, Hudson River PCBs Superfund Site

Site	Well/Piezometer No.	Date Started	Date Completed	Drilling Company	Date Sampled	Depth Drilled (Feet BGS)	Ground Elevation (Feet AMSL)	PVC Well Casing/ Screen I.D. (inches)	Total Depth (Feet TOIC)	TOIC Casing Elevation (Feet AMSL)	Screened (0.010 slot) Interval (Feet BGS)	Sand Interval (Feet BGS)	Seal Interval (Feet BGS)	Stick-up (Feet AGS)
EPL	EPL-GP01	9/29/03	9/29/03	N	10/16/03	25.4	135.11	1	27.4	137.2	15.4-25.4	5-25.4	2-5	2.0
	EPL-GP02	9/29/03	9/29/03	N	10/16/03	25	137.91	1	27.4	140.42	15-25	4-25	2-4	2.4
	EPL-GP03	9/29/03	9/29/03	N	10/16/03	25.1	135.52	1	27.51	137.99	15.1-25.1	4-25.1	0.6-4	2.41
	EPL-GP04	10/1/03	10/1/03	N	10/16/03	25	129.47	1	27.3	131.79	15-25	4-25	2-4	2.3
	EPL-GP05	10/1/03	10/1/03	N	10/16/03	25	132	1	27.5	134.53	15-25	4-25	2-4	2.5
OM	OM-GP01	10/2/03	10/2/03	N	10/16/03	25	157.67	1	27.4	160.19	15-25	4-25	2-4	2.4
	OM-GP02	10/2/03	10/2/03	N	10/16/03	25.4	141.79	1	27.62	144.2	15.3-25.3	4-25.3	2-4	2.32
	OM-GP03	10/2/03	10/2/03	N	10/15/03	25	155.84	1	27.3	158.37	10-25	4-25	2-4	2.3
	OM-GP04	10/2/03	10/2/03	N	10/15/03	25	143.5	1	22.5	146	10-20	4-25	0-4	2.5
	OM-GP05	10/2/03	10/2/03	N	10/14/03	25	133.43	1	27.5	135.93	15-25	4-25	0-4	2.5
GPS	GPS-GP01	10/9/03	10/9/03	N	10/13/03	25	108.4	1	28.15	111.60	15-25	4-25	2-4	3.15
	GPS-GP02	10/8/03	10/8/03	N	10/14/03	9.3	108.68	1	11.8	111.19	4.3-9.3	3-9.3	0.5-3	2.5
	GPS-GP03	10/8/03	10/8/03	N	10/14/03	25.5	102.76	1	27.55	104.76	15.5-25.5	4-25.5	2-4	2.05
	GPS-GP04	10/8/03	10/8/03	N	10/14/03	25.7	112.02	1	28.2	114.48	15.7-25.7	4-25.7	2-4	2.5
	GPS-GP05	10/8/03	10/8/03	N	10/13/03	25	100.71	1	27.45	103.31	14.85-24.85	4-25	2-4	2.6
	GPS-GP06	10/9/03	10/9/03	N	10/14/03	25	110.76	1	17.5	113.24	5-15	3-15 ^A	1-3	2.5
	GPS-GP07	10/9/03	10/9/03	N	10/14/03	25	112.98	1	22.4	115.38	10-20	3-20 ^B	0.5-3	2.4
	GPS-GP08	10/8/03	10/8/03	N	10/13/03	18.5	113.36	1	19.7	114.74	8.5-18.5	3-18.5	1-3	1.2
NCC	NCC-GP01	10/9/03	10/9/03	N	10/15/03	25	48.53	1	25.5	51.02	13-23	4-23 ^C	2-4	2.5
	NCC-GP02	10/7/03	10/7/03	N	-	6.9	52.5	Dry hole - no well constructed						
	NCC-GP03	10/9/03	10/9/03	N	10/15/03	22.9	43.56	1	23.65	46.2	11-21	4-22.9	2-4	2.65
	NCC-GP04	10/3/03	10/3/03	N	-	2	65.89	Not accessible by rig, boring was hand-augered						
	NCC-GP05	10/7/03	10/7/03	N	-	11	51.52	Dry hole - no well constructed (same as boring NCC-GT01)						
BBA	BBA-GP01	10/10/03	10/10/03	N	10/15/03	25	131.88	1	18.6	134.39	6-16	4-16 ^D	0.5-4	2.6
	BBA-GP02	10/10/03	10/10/03	N	10/16/03	25	144.41	1	18.55	146.87	6-16	4-18 ^E	0.5-4	2.55
	BBA-GP03	10/9/03	10/9/03	N	10/15/03	18.3	76.45	2	19.62	77.77	3.8-13.8	2.8-18.3	0-2.8	1.32
	BBA-GP04	10/10/03	10/10/03	N	10/15/03	14	77.57	1	16.8	80.38	3.5-13.5	2-14	0.5-2	2.8

Table 3.2-1 Summary of Temporary Well Construction, Hudson River PCBs Superfund Site

Site	Well/Piezometer No.	Date Started	Date Completed	Drilling Company	Date Sampled	Depth Drilled (Feet BGS)	Ground Elevation (Feet AMSL)	PVC Well Casing/	Total Depth (Feet TOIC)	TOIC Casing Elevation (Feet AMSL)	Screened (0.010 slot) Interval (Feet BGS)	Sand Interval (Feet BGS)	Seal Interval (Feet BGS)	Stick-up (Feet AGS)
MM	MM-GP01	10/6/03	10/6/03	N	10/10/03	25	18.73	1	27.4	20.52	15-25	4-25	2-4	2.4
	MM-GP02	10/3/03	10/3/03	N	10/10/03	25	5.87	1	27.6	7.75	15-25	4-25	2-4	2.6
	MM-GP04	10/6/03	10/6/03	N	10/15/03	25	15.50	1	27.4	17.22	14.5-24.5	4-24.5	2-4	2.9
OG	OG-GP01	10/7/03	10/7/03	N	10/15/03	25	10.28	1	17.70	12.94	5.35-15.35	3-16 ^E	1-3	2.35
	OG-GP02	10/7/03	10/7/03	N	10/15/03	25.1	14.26	1	27.35	16.46	15.1-25.1	4-25.1	2-4	2.25
	OG-GP03	10/7/03	10/7/03	N	10/15/03	25	17.95	1	27.45	20.4	15-25	4-25	2-4	2.45

^A Hole was allowed to collapse to 10.15 feet BGS.

^B Hole was allowed to collapse to 20 feet BGS.

^C Hole was allowed to collapse to 23 feet BGS.

^D Hole was allowed to collapse to 18 feet BGS.

^E Hole was allowed to collapse to 16 feet BGS.

Key:

AGS = Above ground surface.

AMSL = Above mean sea level.

BBA = Bruno/Brickyard Associates/Alonzo Site.

BGS = Below ground surface.

EPL = Energy Park/Longe/NYS Canal Corporation Site.

GP = Geoprobe temporary well location.

GPS = Georgia Pacific/NYS Canal Corporation Site.

I.D. = Inner diameter.

MM = State of New York/First Rensselaer/Marine Management Site

N = Northstar Drilling.

NCC = NYS Canal Corporation/Allco/Leyerle Site.

NYS = New York State.

OG = OG Real Estate.

OM = Old Moreau Dredge Spoils Area / NYS Canal Corporation Site.

PVC = Polyvinyl chloride.

TOIC = Top of inner casing.

**Table 3.2-2 Groundwater and Surface Water Field Measurements
Georgia Pacific/NYS Canal Corporation Site**

Sample ID	Date	pH (s.u.)	Temperature (°C)	Conductivity (µS/cm)	Turbidity (NTU)
Groundwater					
GPS-GP01-GW	10/13/03	6.04	12.3	837.4	>1,000
GPS-GP02-GW	10/14/03	6.22	13.4	538.2	55.4
GPS-GP03-GW	10/14/03	7.28	11.7	1,075	>1,000
GPS-GP04-GW	10/14/03	6.56	10.3	1,242	>1,000
GPS-GP05-GW	10/13/03	6.78	12.8	852.1	370
GPS-GP06-GW	10/14/03	6.35	11.3	306.1	982
GPS-GP07-GW	10/14/03	6.63	10.5	917.1	>1,000
GPS-GP08-GW	10/13/03	6.55	15.4	433.2	60.5
Surface Water					
GPS-SW01	10/9/03	Dry			
GPS-SW02	10/9/03	7.11	10.5	615.6	6.31
GPS-SW03	10/9/03	7.08	11.1	169.5	9.68
GPS-SW04	10/9/03	7.15	17.2	588.0	37.7
GPS-SW05	10/9/03	6.39	9.9	725.5	35.2

Key:

- °C = Degrees Celsius.
- GP = Boring location.
- GPS = Georgia Pacific/NYS Canal Corporation Site.
- GW = Groundwater sample.
- ID = Identification.
- µS/cm = MicroSiemens per centimeter.
- NTU = Nephelometric turbidity units.
- NYS = New York State.
- s.u. = Standard units.
- SW = Surface water sample.
- > = Greater than.

Table 3.2-3 Summary of Water Level Elevations, Georgia Pacific/NYS Canal Corporation Site

Well/ Stream Gauge ID	Ground Elevation (ft AMSL)	Reference Elevation (ft AMSL) ^a	10/13/2003-10/14/2003		10/23/03		11/6/03	
			Water Level (ft TOIC)	Water Elevation (ft AMSL)	Water Level (ft TOIC)	Water Elevation (ft AMSL)	Water Level (ft TOIC)	Water Elevation (ft AMSL)
GPS-GP01	108.40	111.60	9.67	101.93	9.04	102.56	8.79	102.81
GPS-GP02	108.68	111.19	8.84	102.35	8.60	102.59	7.45	103.74
GPS-GP03	102.76	104.76	11.44	93.32	11.28	93.48	10.58	94.18
GPS-GP04	112.02	114.48	21.15	93.33	20.95	93.53	20.61	93.87
GPS-GP05	100.71	103.31	18.03	85.28	17.24	86.07	16.66	86.65
GPS-GP06	110.76	113.24	7.48	105.76	7.44	105.80	6.40	106.84
GPS-GP07	112.98	115.38	12.30	103.08	14.92	100.46	12.96	102.42
GPS-GP08	113.36	114.74	9.97	104.77	9.87	104.87	5.96	108.78
GPS-SG01	NA	96.62	NM	NM	3.98	94.54	1.15	94.77
GPS-dock	NA	96.95	NM	NM	0.85	96.10	0.55	96.40
GPS-SW/SE04	NA	116.40	NM	NM	NM	NM	20.62	95.78
GPS-SW/SE05	NA	113.66	NM	NM	19.06	94.6	18.93	94.73

^a Reference elevation is TOIC for borings, the 3-foot mark on gauge for stream gauges, a surveyed mark on the dock, and the bridge elevation for SW/SE locations.

Key:

AMSL = Above mean sea level.

ft = Feet.

GP = Boring location.

GPS = Georgia Pacific/NYS Canal Corporation Site.

NA = Not applicable.

NM = Not measured.

NYS = New York State.

SE = Sediment sample location.

SG = Stream gauge location.

SW = Surface water location.

TOIC = Top of inner casing.

Table 3.2-4 Georgia Pacific/NYS Canal Corporation Site Sample Listing, Hudson River PCBs Superfund Facility Siting

Geotechnical Analyses																									
							CLP		Non-CLP																
							Organics	Inorganics																	
Media	Date	Sample Location	CLP Number	Matrix Code	Depth A	Type	TCL VOCs (OLM04.2)	TCL SVOCs (OLM04.2)	TCL Pesticides/PCBs (OLM04.2)	TAL Metals/Mercury (ILM04.1)	TAL Cyanide (ILM04.1)	% Solids (ASTM_D2216)	Chlorinated Herbicides (8151A)	Anions (9056)	TOC (Lloyd Kahn)	Hardness (130.2)	Hexane Extractable Material (9071B)	TCLP VOCs	TCLP SVOCs	TCLP Metals/Mercury	Particle Size (ASTM_D422-63)	Atterberg Limits (ASTM_D4318-00)	Moisture Content (ASTM_D2216-98)	Area of Interest	
Surface Soil	10/8/03	GPS-SS01	B1525	SO	0-2 in	N	X	X	X	X	X	X					X							Drum Area	
	10/8/03	GPS-SS02	B1526	SO	0-2 in	N		X	X	X	X	X												Former mill / Fill area	
	10/8/03	GPS-SS03	B1527	SO	0-2 in	N		X	X	X	X	X												Former mill / Land farm area	
	10/8/03	GPS-SS04	B1528	SO	0-2 in	N		X	X	X	X	X												Coverage	
	10/8/03	GPS-SS05	B1529	SO	0-2 in	N	X	X	X	X	X	X												Paper waste area	
	10/8/03	GPS-SS06	B1530	SO	0-2 in	N	X	X	X	X	X	X												Surficial debris / Fill area	
	10/8/03	GPS-SS07	B1531	SO	0-2 in	N		X	X	X	X	X												Coverage	
	10/8/03	GPS-SS08	B1532	SO	0-2 in	M	X	X	X	X	X	X												Former mill / Fill area	
	10/8/03	GPS-SS09	B1533	SO	0-2 in	N		X	X	X	X	X												Behind concrete wall north of bulkhead	
	10/9/03	GPS-SS10	B1534	SO	0-2 in	N	X	X	X	X	X	X	X					X							Composite sample of 3 locations (A, B, C) adjacent to railroad tracks (VOA portion was a discrete sample from aliquot C location)
	10/9/03	GPS-SS11	B15B0	SO	0-2 in	N	X	X	X	X	X	X						X							Northwest drum area
Surface Water	-	GPS-SW01	-	SW	-	N																		Creek running along the western boundary of the former landfill - DRY	
	10/9/03	GPS-SW02	B1521	SW	-	N	X	X	X	X	X			X		X								Drainage ditch in the western part of the inland tract	
	10/9/03	GPS-SW03	B1522	SW	-	N	X	X	X	X	X			X		X								Wetland in the western part of the inland tract	
	10/9/03	GPS-SW03/D	B1520	SW	-	FD	X	X	X	X	X			X		X									
	10/9/03	GPS-SW04	B1523	SW	-	N	X	X	X	X	X			X		X								Former power plant canal at railroad bridge crossing	
	10/9/03	GPS-SW05	B1524	SW	-	N	X	X	X	X	X			X		X									Former power plant canal - at railroad bridge crossing just before the former hydroelectric power generation plant
Sediment	10/9/03	GPS-SE01	B1515	SE	0-2 in	N	X	X	X	X	X	X			X									Creek running along the western boundary of the former landfill	
	10/9/03	GPS-SE02	B1516	SE	0-2 in	N	X	X	X	X	X	X			X										Drainage ditch in the western part of the inland tract
	10/9/03	GPS-SE03	B1517	SE	0-2 in	N	X	X	X	X	X	X			X										Wetland in the western part of the inland tract
	10/9/03	GPS-SE04	B1518	SE	0-2 in	N	X	X	X	X	X	X			X										Former power plant canal at railroad bridge crossing
	10/9/03	GPS-SE05	B1519	SE	0-2 in	N	X	X	X	X	X	X			X										Former power plant canal - at railroad bridge crossing just before the former hydroelectric power generation plant

Key at the end of Table

Table 3.2-4 Georgia Pacific/NYS Canal Corporation Site Sample Listing, Hudson River PCBs Superfund Facility Siting

Media	Date	Sample Location	CLP Number	Matrix Code	Depth A	Type	CLP		TCL VOCs (OLM04.2)	TCL SVOCs (OLM04.2)	TCL Pesticides/PCBs (OLM04.2)	TAL Metals/Mercury (ILM04.1)	TAL Cyanide (ILM04.1)	% Solids (ASTM_D2216)	Chlorinated Herbicides (8151A)	Anions (9086)	TOC (Lloyd Kahn)	Hardness (130.2)	Hexane Extractable Material (9071B)	TCLP VOCs	TCLP SVOCs	TCLP Metals/Mercury	Particle Size (ASTM_D422-63)	Atterberg Limits (ASTM_D4318-00)	Moisture Content (ASTM_D2216-98)	Area of Interest
							Organics	Inorganics																		
Geoprobe Borehole Subsurface Soil	10/9/03	GPS-GP01-SB	B1536	SO	10-12	N	X	X	X	X	X	X	X													Drum / Fill area - downgradient
	10/8/03	GPS-GP02-SB	B1541	SO	7-9	N	X	X	X	X	X	X	X													Bulkhead - downgradient
	10/8/03	GPS-GP03-SB	B1542	SO	9.5-12	N	X	X	X	X	X	X	X													Former mill / Land farm area downgradient
	10/8/03	GPS-GP03-SB/D	B15B4	SO	9.5-12	FD	X	X	X	X	X	X	X													Former mill / Land farm area downgradient
	10/8/03	GPS-GP04-SB	B1543	SO	22-24	N	X	X	X	X	X	X	X													Coverage - downgradient
	10/8/03	GPS-GP05-SB1	B1544	SO	12-16	N	X	X	X	X	X	X	X													Coverage - downgradient
	10/8/03	GPS-GP05-SB2	B15B3	SO	22-24	N	X	X	X	X	X	X	X													Coverage - upgradient
	10/9/03	GPS-GP06-SB	B1545	SO	10-12	N	X	X	X	X	X	X	X													Coverage - upgradient
	10/9/03	GPS-GP07-SB	B1546	SO	9-11	N	X	X	X	X	X	X	X													Former mill / Fill area
	10/8/03	GPS-GP08-SB	B1547	SO	5.3-7.3	M	X	X	X	X	X	X	X													Drum / Fill area - downgradient
Geoprobe Temporary Well Groundwater	10/13/03	GPS-GP01-GW	B15B1	GW	15-25	N	X	X	X	X	X	X	X													Bulkhead - downgradient
	10/14/03	GPS-GP02-GW	B15B6	GW	4.3-9.3	N	X	X	X	X	X	X	X													Former mill / Land farm area downgradient
	10/14/03	GPS-GP03-GW	B1590	GW	15.5-25.5	N	X	X	X	X	X	X	X													Coverage - downgradient
	10/14/03	GPS-GP04-GW	B1555	GW	15.7-25.7	N	X	X	X	X	X	X	X													Coverage - downgradient
	10/13/03	GPS-GP05-GW	B1559	GW	14.85-24.85	M	X	X	X	X	X	X	X													Coverage - upgradient
	10/14/03	GPS-GP06-GW	B15B7	GW	5-15	N	X	X	X	X	X	X	X													Coverage - upgradient
	10/14/03	GPS-GP07-GW	B15B8	GW	10-20	N	X	X	X	X	X	X	X													Former mill / Fill area
	10/13/03	GPS-GP08-GW	B1566	GW	8.5-18.5	N	X	X	X	X	X	X	X													Facility
Geotechnical Boring Subsurface Soil	10/8/03	GPS-GT01-SB	-	SO	0-21.2 ^B	N																X	X	X		Rail yard
	10/8/03	GPS-GT02-SB	-	SO	2.2-4	N																X	X	X		Rail yard
	10/8/03	GPS-GT03-SB	-	SO	0-17.8 ^B	N																X	X	X		General
IDW	TBD	GPS-WA01	-	WA	-	N													X	X	X					General
	TBD	GPS-WW01	-	WW	-	N													X	X	X					General

^A Depth in feet below ground surface unless otherwise specified.

^B Continuous sampling for Moisture Content analysis. The 2-2.6 and 12-14 foot BGS depth intervals were used for the Particle Size and Atterberg Limits analyses for GPS-GT01 and GPS-GT03, respectively.

Key:

CLP = Contract Laboratory Protocol
 /D = duplicate sample
 FD = field duplicate sample (Type)
 GP = Geoprobe boring location
 GPS = Georgia Pacific site
 GT = geotechnical boring location
 GW = groundwater sample

IDW = investigation-derived waste
 in = inch
 M = matrix spike/matrix spike duplicate (Type)
 N = original sample (Type)
 NYS = New York State
 PCB = polychlorinated biphenyl
 QA = quality assurance

QC = quality control
 SB = subsurface soil
 SE = sediment sample
 SO = soil sample
 SS = surface soil
 SVOCs = semivolatile organic compounds
 SW = surface water

TBD = to be determined
 TCL = target compound list
 TCLP = toxicity characteristic leachate procedure
 TOC = total organic carbon
 VOCs = volatile organic compounds
 WA = IDW solid waste
 WW = IDW waste water

Table 3.3-1 Analytical Data Summary of Detected Analytes for Surface Soil Samples from the Georgia Pacific Site

			Sample ID:	GPS-SS01	GPS-SS02	GPS-SS03	GPS-SS04	GPS-SS05	GPS-SS06
			Date:	10/9/2003	10/8/2003	10/8/2003	10/8/2003	10/8/2003	10/8/2003
Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Depth:	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in
TCL Volatile Organic Compounds (µg/Kg)									
1,1,2-Trichloro-1,2,2-Trifluoroethane	6000	NA		0.6 J	--	--	--	10 U	11 U
TCL Semivolatile Organic Compounds (µg/Kg)									
4-Chloro-3-methylphenol	240 or MDL	NA		460 U	380 U	410 U	450 U	390 U	430 U
4-Nitrophenol	100 or MDL	NA		1200 UJ	940 UJ	1000 UJ	1100 UJ	980 UJ	1100 UJ
Acenaphthylene	41000	NA		460 U	88 J	410 U	450 U	150 J	430 U
Anthracene	50000	NA		460 U	110 J	410 U	450 U	120 J	430 U
Benzaldehyde	NA	NA		98 J	380 U	410 U	450 U	390 U	430 U
Benzo(a)anthracene	224 or MDL	NA		460 U	250 J	410 U	450 U	520	430 U
Benzo(a)pyrene	61 or MDL	NA		460 U	330 J	410 U	450 U	490	430 U
Benzo(b)fluoranthene	1100	NA		460 U	530	410 U	110 J	770	430 U
Benzo(g,h,i)perylene	50000	NA		460 U	250 J	410 U	450 U	290 J	430 U
Benzo(k)fluoranthene	1100	NA		110 J	500	410 U	110 J	510	430 U
Bis(2-Ethylhexyl)Phthalate	50000	NA		460 U	380 U	410 U	450 U	81 J	100 J
Carbazole	NA	NA		460 UJ	380 UJ	410 UJ	450 UJ	390 UJ	430 UJ
Chrysene	400	NA		110 J	420	410 U	120 J	750	430 U
Dibenzo(a,h)anthracene	14 or MDL	NA		460 U	110 J	410 U	450 U	190 J	430 U
Di-n-butylphthalate	8100	NA		460 U	380 U	410 U	450 U	180 J	430 U
Di-n-octylphthalate	50000	NA		460 U	380 U	410 U	450 U	390 U	430 U
Fluoranthene	50000	NA		170 J	520	410 U	160 J	1100	430 U
Indeno(1,2,3-cd)pyrene	3200	NA		460 U	370 J	410 U	450 U	420	430 U
Phenanthrene	50000	NA		460 U	170 J	410 U	450 U	530	430 U
Pyrene	50000	NA		160 J	530	410 U	140 J	1000	430 U
TCL Pesticide and PCBs (µg/Kg)									
4,4'-DDE	2100	NA		9.1	9.7 JN	4.1 U	4.5 U	16	4.3 U
4,4'-DDT	2100	NA		4.6 U	3.8 U	4.1 U	4.5 U	36 J	4.3 U
alpha-Chlordane	540 (3)	NA		2.4 U	1.9 U	2.1 U	2.3 U	2.4	2.2 U
Aroclor-1248	1000	NA		46 U	38 U	41 U	45 U	150	43 U
Aroclor-1254	1000	NA		46 U	970	41 U	45 U	440	43 U
Aroclor-1260	1000	NA		46 U	630	41 U	45 U	39 U	43 U
beta-BHC	200	NA		2.4 U	3.6 R	2.1 U	2.3 U	2 U	2.2 U
Dieldrin	44	NA		4.6 U	3.8 U	4.1 U	4.5 U	11 J	4.3 U
Endrin Aldehyde	NA	NA		4.6 U	3.8 U	4.1 U	4.5 U	11	4.3 U
Endrin Ketone	NA	NA		4.6 U	3.8 U	4.1 U	4.5 U	3.9 U	4.3 U
gamma-BHC (Lindane)	60	NA		2.4 U	1.9 U	2.1 U	2.3 U	2 U	2.2 U
Methoxychlor	NA	NA		24 U	19 U	21 U	23 U	20 J	22 U
Herbicides (µg/Kg)									
2,4-DB	NA	NA		--	--	--	--	--	--

Table 3.3-1 Analytical Data Summary of Detected Analytes for Surface Soil Samples from the Georgia Pacific Site

			Sample ID:	GPS-SS01	GPS-SS02	GPS-SS03	GPS-SS04	GPS-SS05	GPS-SS06
			Date:	10/9/2003	10/8/2003	10/8/2003	10/8/2003	10/8/2003	10/8/2003
Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Depth:	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in
TAL Metals and Mercury (mg/Kg)									
Aluminum	SB	NA		8340	7830	8760	8160	3020	9700
Antimony	SB	NA		2 U	1.6 U	1.7 U	1.9 U	101	1.8 U
Arsenic	7.5 or SB	3-12 (NYS BG)		7.1 J	7.7 J	5.2 J	9.9 J	27.5 J	8.9 J
Barium	300	15-600		75.3	75.8	38.5 B	81.4	204	140
Beryllium	0.16 or SB	0-1.75		0.35 B	0.51 B	0.27 B	0.3 B	0.32 B	0.45 B
Cadmium	1 or SB	0.1-1		0.44 B	0.11 U	0.12 U	0.13 U	0.12 U	0.13 U
Calcium	SB	130-35000 (NYS BG)		6320	18100	2680	13200	1150 B	2190
Chromium	10 or SB	1.5-40 (NYS BG)		26.1	25.7	9.5	12.2	73.7	23.3
Cobalt	30 or SB	2.5-60 (NYS BG)		9.5 B	11.8	7.5 B	9.2 B	13.1	9.2 B
Copper	25 or SB	1-50		721	85.1	19.4	33.5	774	41.4
Iron	2000 or SB	2000-550000		31900	27000	19700	26400	121000	19800
Lead	SB or 200 - 500	200-500		1230	203	11.7	72	2470	174
Magnesium	SB	100-5000		4070	4300	5070	7280	804 B	3380
Manganese	NA	50-5000		701	390	454	622	584	431
Nickel	13 or SB	0.5-25		34	31.4	17.1	24	54.3	17.2
Potassium	SB	8500-43000 (NYS BG)		677 B	1070 B	506 B	728 B	268 B	816 B
Selenium	2 or SB	0.1-3.9		0.52 UJ	0.42 UJ	0.45 UJ	0.5 UJ	0.44 U	0.49 U
Silver	SB	NA		0.41 U	0.33 U	0.35 U	0.39 U	7.4	0.38 U
Thallium	SB	NA		1.5 B	0.92 U	0.99 U	1.1 U	3.6	1.1 U
Vanadium	150 or SB	1-300		149	32.4	10 B	44.3	60.5	18.4
Zinc	20 or SB	9-50		271	169	49.8	94.6	636	196
Mercury	0.1	0.001-0.2		0.06 U	0.17 J	0.06 U	0.17 J	7.7	0.06 U
Total Cyanide (mg/Kg)									
Cyanide	NA	NA		0.18	0.3	0.23	0.3	0.42	0.15 U
Total Petroleum Hydrocarbons (mg/Kg)									
N-Hexane Extractable Material	NA	NA		1500	--	--	--	--	--

Table 3.3-1 Analytical Data Summary of Detected Analytes for Surface Soil Samples from the Georgia Pacific Site

			Sample ID:	GPS-SS07	GPS-SS08	GPS-SS09	GPS-SS10	GPS-SS11
			Date:	10/8/2003	10/8/2003	10/8/2003	10/9/2003	10/9/2003
Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Depth:	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in
TCL Volatile Organic Compounds (µg/Kg)								
1,1,2-Trichloro-1,2,2-Trifluoroethane	6000	NA		--	13 U	--	11 UJ	5 J
TCL Semivolatile Organic Compounds (µg/Kg)								
4-Chloro-3-methylphenol	240 or MDL	NA		100 J	390 U	400 U	420 U	620 U
4-Nitrophenol	100 or MDL	NA		590 J	990 UJ	1000 UJ	1100 U	1600 U
Acenaphthylene	41000	NA		450 U	390 U	400 U	1100	620 U
Anthracene	50000	NA		450 U	390 U	400 U	1000	620 U
Benzaldehyde	NA	NA		450 U	390 U	400 U	420 U	620 U
Benzo(a)anthracene	224 or MDL	NA		450 U	90 J	400 U	2700	130 J
Benzo(a)pyrene	61 or MDL	NA		450 U	89 J	400 U	2600	130 J
Benzo(b)fluoranthene	1100	NA		450 U	130 J	400 U	4500	140 J
Benzo(g,h,i)perylene	50000	NA		450 U	390 U	400 U	1600	620 U
Benzo(k)fluoranthene	1100	NA		450 U	110 J	400 U	2000	180 J
Bis(2-Ethylhexyl)Phthalate	50000	NA		450 U	390 U	400 U	190 J	620 U
Carbazole	NA	NA		450 UJ	390 UJ	400 UJ	300 J	620 UJ
Chrysene	400	NA		450 U	150 J	400 U	3200	140 J
Dibenzo(a,h)anthracene	14 or MDL	NA		450 U	390 U	400 U	730	620 U
Di-n-butylphthalate	8100	NA		450 U	390 U	400 U	420 U	620 U
Di-n-octylphthalate	50000	NA		450 U	390 U	400 U	390 J	620 U
Fluoranthene	50000	NA		450 U	190 J	400 U	4400	190 J
Indeno(1,2,3-cd)pyrene	3200	NA		450 U	81 J	400 U	2700	130 J
Phenanthrene	50000	NA		450 U	390 U	400 U	640	620 U
Pyrene	50000	NA		450 U	190 J	400 U	4400	230 J
TCL Pesticide and PCBs (µg/Kg)								
4,4'-DDE	2100	NA		1 J	1.3 J	4 U	4.2 U	6.2 U
4,4'-DDT	2100	NA		4.5 U	2.8 J	4 U	15 J	6.2 U
alpha-Chlordane	540 (3)	NA		2.3 U	2 U	2.1 U	2.2 U	3.2 U
Aroclor-1248	1000	NA		45 U	39 U	40 U	42 U	62 U
Aroclor-1254	1000	NA		45 U	39 U	40 U	42 U	62 U
Aroclor-1260	1000	NA		45 U	39 U	40 U	42 U	62 U
beta-BHC	200	NA		2.3 J	2 U	2.1 U	5.5 R	3.2 U
Dieldrin	44	NA		4.5 U	3.9 U	4 U	4.2 U	6.2 U
Endrin Aldehyde	NA	NA		4.5 U	3.9 U	4 U	4.2 U	6.2 U
Endrin Ketone	NA	NA		4.5 U	3.9 U	4 U	47	6.2 U
gamma-BHC (Lindane)	60	NA		2.3 U	2 U	2.1 U	2.2 U	0.9 J
Methoxychlor	NA	NA		23 U	20 U	21 U	49 J	32 U
Herbicides (µg/Kg)								
2,4-DB	NA	NA		--	--	--	56.6	--

Table 3.3-1 Analytical Data Summary of Detected Analytes for Surface Soil Samples from the Georgia Pacific Site

			Sample ID:	GPS-SS07	GPS-SS08	GPS-SS09	GPS-SS10	GPS-SS11
			Date:	10/8/2003	10/8/2003	10/8/2003	10/9/2003	10/9/2003
Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Depth:	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in	0 - 2 in
TAL Metals and Mercury (mg/Kg)								
Aluminum	SB	NA		8470	3630	6440	3660	2120
Antimony	SB	NA		1.9 U	13 B	1.8 U	2.2 B	3.1 U
Arsenic	7.5 or SB	3-12 (NYS BG)		5.2 J	4.5	25 J	12.5	1.9 U
Barium	300	15-600		67.4	99	59.1	65	38 B
Beryllium	0.16 or SB	0-1.75		0.38 B	0.28 B	0.41 B	0.33 B	0.08 B
Cadmium	1 or SB	0.1-1		0.13 U	12	0.12 U	0.13 U	0.33 B
Calcium	SB	130-35000 (NYS BG)		3630	1840	2130	6760	10100
Chromium	10 or SB	1.5-40 (NYS BG)		10.9	16.9	8.5	12.6	13
Cobalt	30 or SB	2.5-60 (NYS BG)		8.7 B	5.9 B	6.1 B	7.8 B	3.2 B
Copper	25 or SB	1-50		20.9	180	22	49.3	25.2
Iron	2000 or SB	2000-550000		17700	15300	22800	15700	11000
Lead	SB or 200 - 500	200-500		73	612	15.5	111	36.8
Magnesium	SB	100-5000		4060	1080 B	2660	3100	1450 B
Manganese	NA	50-5000		497	223	204	337	224
Nickel	13 or SB	0.5-25		21.5	17.6	12.7	19	13.6
Potassium	SB	8500-43000 (NYS BG)		764 B	266 B	512 B	509 B	582 B
Selenium	2 or SB	0.1-3.9		0.51 U	0.59 B	0.47 U	0.49 U	1.3 U
Silver	SB	NA		0.4 U	0.37 B	0.37 U	0.39 U	0.46 U
Thallium	SB	NA		1.1 U	0.99 U	1 U	1.1 U	2.3 U
Vanadium	150 or SB	1-300		44.8	28	15	41	34
Zinc	20 or SB	9-50		85.7	1630	40.6	144	320
Mercury	0.1	0.001-0.2		0.07 U	0.83	0.06 U	0.07 BJ	0.09 BR
Total Cyanide (mg/Kg)								
Cyanide	NA	NA		0.16 U	0.3	0.14 U	0.15 U	0.32 U
Total Petroleum Hydrocarbons (mg/Kg)								
N-Hexane Extractable Material	NA	NA		--	--	--	800	1360

Table 3.3-1 Analytical Data Summary of Detected Analytes for Surface Soil Samples from the Georgia Pacific Site

(1) New York State Department of Environmental Conservation, Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1994.

(2) Eastern United States background values.

Key:

- B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.
 - BG = Background.
 - /D = Duplicate sample.
 - GPS = Georgia Pacific Site.
 - in = Inches.
 - J = The reported value is an estimated quantity.
 - JN = The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.
 - MDL = Method Detection Limit
 - mg/Kg = Milligrams per kilogram.
 - NA = Not applicable/available.
 - NYS = New York State.
 - NYSDEC = New York State Department of Environmental Conservation.
 - PCB = Polychlorinated biphenyl.
 - R = The data is unusable.
 - SB = Site background.
 - SS = Surface soil sample.
 - TAL = Target Analyte List.
 - TCL = Target Compound List.
 - U = The analyte was analyzed for but not detected at the value reported.
 - UJ = The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.
 - µg/Kg = Micrograms per kilogram.
 - = Sample was not analyzed for this parameter.
- 590 J

Shaded cells with bold exceed the NYSDEC screening value (except for metals).

Table 3.3-2 Analytical Data Summary of Detected Analytes for Subsurface Soil Samples from the Georgia Pacific Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: Date: Depth:	GPS-GP01-SB 10/9/2003 10 - 12 ft	GPS-GP02-SB 10/8/2003 7 - 9 ft	GPS-GP03-SB 10/8/2003 9.5 - 12 ft	GPS-GP03-SB/D 10/8/2003 9.5 - 12 ft	GPS-GP04-SB 10/8/2003 22 - 24 ft
TCL Volatile Organic Compounds (µg/Kg)								
1,1,2-Trichloro-1,2,2-Trifluoroethane	6000	NA		7 J	10 U	10 U	12 U	10 U
2-Butanone	NA	NA		86 J	10 U	10 U	12 U	10 U
Acetone	200	NA		520 J	20 U	25 J	12 UJ	19 UJ
Carbon Disulfide	2700	NA		23 UJ	10 UJ	0.8 J	12 UJ	0.4 J
Cyclohexane	NA	NA		23 U	10 U	0.5 J	0.6 J	1 J
Toluene	1500	NA		46 J	10 U	10 U	12 U	10 U
Xylenes (Total)	1200	NA		4 J	10 U	10 U	12 U	10 U
TCL Semivolatile Organic Compounds (µg/Kg)								
Acenaphthylene	41000	NA		520 U	490 U	400 U	490 U	440 U
Anthracene	50000	NA		520 U	490 U	400 U	490 U	440 U
Benzaldehyde	NA	NA		520 U	490 U	400 U	490 U	440 U
Benzo(a)anthracene	224 or MDL	NA		520 U	490 U	400 U	490 U	440 U
Benzo(a)pyrene	61 or MDL	NA		520 U	490 U	400 U	490 U	440 U
Benzo(b)fluoranthene	1100	NA		520 U	490 U	400 U	490 U	440 U
Benzo(g,h,i)perylene	50000	NA		520 U	490 U	400 U	490 U	440 U
Benzo(k)fluoranthene	1100	NA		520 U	490 U	400 U	490 U	440 U
Bis(2-Ethylhexyl)Phthalate	50000	NA		520 U	1100	400 U	490 U	440 U
Carbazole	NA	NA		520 UJ	490 UJ	400 UJ	490 UJ	440 UJ
Chrysene	400	NA		520 U	490 U	400 U	490 U	440 U
Dibenzo(a,h)anthracene	14 or MDL	NA		520 U	490 U	400 U	490 U	440 U
Fluoranthene	50000	NA		520 U	490 U	400 U	490 U	440 U
Fluorene	50000	NA		520 U	490 U	400 U	490 U	440 U
Indeno(1,2,3-cd)pyrene	3200	NA		520 U	490 U	400 U	490 U	440 U
Phenanthrene	50000	NA		520 U	490 U	400 U	490 U	440 U
Pyrene	50000	NA		520 U	490 U	400 U	490 U	440 U

Table 3.3-2 Analytical Data Summary of Detected Analytes for Subsurface Soil Samples from the Georgia Pacific Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: Date: Depth:	GPS-GP01-SB 10/9/2003 10 - 12 ft	GPS-GP02-SB 10/8/2003 7 - 9 ft	GPS-GP03-SB 10/8/2003 9.5 - 12 ft	GPS-GP03-SB/D 10/8/2003 9.5 - 12 ft	GPS-GP04-SB 10/8/2003 22 - 24 ft
TCL Pesticide and PCBs (µg/Kg)								
4,4'-DDD	2900	NA		1.5 J	4.9 U	4 U	4.9 U	4.4 U
4,4'-DDE	2100	NA		5.2 U	4.9 U	4 U	4.9 U	4.4 U
4,4'-DDT	2100	NA		5.2 U	4.9 U	4 U	4.9 U	4.4 U
beta-BHC	200	NA		2.7 U	6.7	2.1 U	2.5 U	2.3 U
gamma-BHC (Lindane)	60	NA		2.7 U	1.5 J	2.1 U	2.5 U	2.3 U
Methoxychlor	NA	NA		27 U	25 U	21 U	25 U	23 U
TAL Metals and Mercury (mg/Kg)								
Aluminum	SB	NA		2620	4370	8710	8660	6860
Arsenic	7.5 or SB	3-12 (NYS BG)		1.8 U	1.5 U	8.2 J	13.2	4
Barium	300	15-600		24.6 B	35.4 B	81.9	95.3	70.3
Beryllium	0.16 or SB	0-1.75		0.12 B	0.22 B	0.54 B	0.57 B	0.33 B
Calcium	SB	130-35000 (NYS BG)		1990	2340	2990	2580	39800
Chromium	10 or SB	1.5-40 (NYS BG)		4.4	6.6	11.2	14	12.5
Cobalt	30 or SB	2.5-60 (NYS BG)		2.6 B	4.5 B	11.2 B	14.3	10.3 B
Copper	25 or SB	1-50		4 B	11.8	22	20.7	24.6
Iron	2000 or SB	2000-550000		5110	12200	27800	28600	18500
Lead	SB or 200 - 500	200-500		6	18.1	12.8	11.7	12.5
Magnesium	SB	100-5000		1120 B	1440	4050	3660	15400
Manganese	NA	50-5000		81.3	74.3	2360	1880	757
Nickel	13 or SB	0.5-25		3.7 B	6 B	21.1	24.6	17.8
Potassium	SB	8500-43000 (NYS BG)		238 B	302 B	517 B	576 B	1090 B
Selenium	2 or SB	0.1-3.9		1.2 U	0.96 U	0.46 U	0.47 U	0.61 B
Silver	SB	NA		0.42 U	0.35 U	0.37 U	0.37 U	0.4 U
Sodium	SB	6000-8000		142 U	119 U	134 U	136 U	145 U
Vanadium	150 or SB	1-300		8 B	15.6	16.8	17.4	10.8 B
Zinc	20 or SB	9-50		26.9	44.5	52.9	55.1	47.7
Mercury	0.1	0.001-0.2		0.27 R	0.07 BR	0.06 U	0.06 U	0.06 U
Total Cyanide (mg/Kg)								
Cyanide	NA	NA		0.29 U	0.31	0.15 U	0.15 U	0.16 U

Table 3.3-2 Analytical Data Summary of Detected Analytes for Subsurface Soil Samples from the Georgia Pacific Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID:	GPS-GP05-SB1	GPS-GP05-SB2	GPS-GP06-SB	GPS-GP07-SB	GPS-GP08-SB
			Date:	10/8/2003	10/8/2003	10/9/2003	10/9/2003	10/8/2003
			Depth:	12 - 16 ft	22 - 24 ft	10 - 12 ft	9 - 11 ft	5.3 - 7.3 ft
TCL Volatile Organic Compounds (µg/Kg)								
1,1,2-Trichloro-1,2,2-Trifluoroethane	6000	NA		10 U	10 U	10 UJ	1 J	10 U
2-Butanone	NA	NA		10 U	10 U	10 U	9 J	10 U
Acetone	200	NA		10 UJ	47 UJ	10 U	63	10 UJ
Carbon Disulfide	2700	NA		10 U	2 J	10 UJ	1 J	10 UJ
Cyclohexane	NA	NA		10 U	10 U	10 U	11 U	10 U
Toluene	1500	NA		10 U	10 U	10 U	11 U	10 U
Xylenes (Total)	1200	NA		10 U	10 U	10 U	11 U	10 U
TCL Semivolatile Organic Compounds (µg/Kg)								
Acenaphthylene	41000	NA		310 J	450 U	420 U	400 U	400 U
Anthracene	50000	NA		280 J	450 U	420 U	400 U	400 U
Benzaldehyde	NA	NA		380 U	230 J	420 U	400 U	400 U
Benzo(a)anthracene	224 or MDL	NA		690	450 U	420 U	400 U	400 U
Benzo(a)pyrene	61 or MDL	NA		940	450 U	420 U	400 U	400 U
Benzo(b)fluoranthene	1100	NA		1100	450 U	420 U	400 U	400 U
Benzo(g,h,i)perylene	50000	NA		540	450 U	420 U	400 U	400 U
Benzo(k)fluoranthene	1100	NA		990	450 U	420 U	400 U	400 U
Bis(2-Ethylhexyl)Phthalate	50000	NA		380 U	450 U	420 U	400 U	400 U
Carbazole	NA	NA		140 J	450 UJ	420 UJ	400 UJ	400 UJ
Chrysene	400	NA		980	450 U	420 U	400 U	400 U
Dibenzo(a,h)anthracene	14 or MDL	NA		290 J	450 U	420 U	400 U	400 U
Fluoranthene	50000	NA		1700	450 U	420 U	400 U	400 U
Fluorene	50000	NA		84 J	450 U	420 U	400 U	400 U
Indeno(1,2,3-cd)pyrene	3200	NA		860	450 U	420 U	400 U	400 U
Phenanthrene	50000	NA		1000	450 U	420 U	400 U	400 U
Pyrene	50000	NA		1300	450 U	420 U	400 U	400 U

Table 3.3-2 Analytical Data Summary of Detected Analytes for Subsurface Soil Samples from the Georgia Pacific Site

Analyte	NYSDEC TAGM 4046 (1)	Eastern USA Background (2)	Sample ID: Date: Depth:	GPS-GP05-SB1 10/8/2003 12 - 16 ft	GPS-GP05-SB2 10/8/2003 22 - 24 ft	GPS-GP06-SB 10/9/2003 10 - 12 ft	GPS-GP07-SB 10/9/2003 9 - 11 ft	GPS-GP08-SB 10/8/2003 5.3 - 7.3 ft
TCL Pesticide and PCBs (µg/Kg)								
4,4'-DDD	2900	NA		3.8 U	4.5 U	4.2 U	4 U	4 U
4,4'-DDE	2100	NA		1.2 J	4.5 U	4.2 U	4 U	4 U
4,4'-DDT	2100	NA		3.8 U	4.5 U	1.1 J	4 U	4 U
beta-BHC	200	NA		2 U	2.3 U	2.2 U	2.1 U	2.1 U
gamma-BHC (Lindane)	60	NA		2 U	2.3 U	2.2 U	2.1 U	2.1 U
Methoxychlor	NA	NA		26 JN	23 U	22 U	21 U	21 U
TAL Metals and Mercury (mg/Kg)								
Aluminum	SB	NA		9440	4760	7550	6390	6900
Arsenic	7.5 or SB	3-12 (NYS BG)		3	1.5 B	5.7	1.4 U	6.4
Barium	300	15-600		144	46.1 B	31.9 B	24.9 B	30 B
Beryllium	0.16 or SB	0-1.75		0.4 B	0.32 B	0.46 B	0.21 B	0.26 B
Calcium	SB	130-35000 (NYS BG)		12800	2820	1090 B	1400	1370
Chromium	10 or SB	1.5-40 (NYS BG)		41.7	6.4 B	9.2	7.9	10.1
Cobalt	30 or SB	2.5-60 (NYS BG)		8.1 B	5.4	10.3 B	6.6 B	5.2 B
Copper	25 or SB	1-50		128	8.5	27.2	11	14.7
Iron	2000 or SB	2000-550000		12200	9210	22400	12300	14600
Lead	SB or 200 - 500	200-500		229	5.9	11.2	7.2	7.8
Magnesium	SB	100-5000		7200	2260	3230	2820	3350
Manganese	NA	50-5000		333	114	231	100	206
Nickel	13 or SB	0.5-25		15.2	9.1 B	14.6	11.4	14.5
Potassium	SB	8500-43000 (NYS BG)		837 B	383 B	605 B	392 B	627 B
Selenium	2 or SB	0.1-3.9		0.56 U	0.55 U	1 U	0.95 U	0.44 U
Silver	SB	NA		3.4	0.43 U	0.37 U	0.35 U	0.35 U
Sodium	SB	6000-8000		192 B	158 U	126 U	117 U	128 U
Vanadium	150 or SB	1-300		19.9	11.1 B	11.4 B	9.7 B	10.1 B
Zinc	20 or SB	9-50		244	37.4	49.3	36.5	39.8
Mercury	0.1	0.001-0.2		1.1	0.07 U	0.06 U	0.06 U	0.05 U
Total Cyanide (mg/Kg)								
Cyanide	NA	NA		0.21	0.15 U	0.15 U	0.15 U	0.14 U

Table 3.3-2 Analytical Data Summary of Detected Analytes for Subsurface Soil Samples from the Georgia Pacific Site

(1) New York State Department of Environmental Conservation, Technical and Administrative Guidance Memorandum #4046: Determination of Soil Cleanup Objectives and Cleanup Levels, 1994.
(2) Eastern United States background values.

Key:

- B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.
- BG = Background.
- /D = Duplicate sample.
- ft = Feet.
- GPS = Georgia Pacific Site.
- J = The reported value is an estimated quantity.
- JN = The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.
- MDL = Method Detection Limit
- mg/Kg = Milligrams per kilogram.
- NA = Not applicable/available.
- NYS = New York State.
- NYSDEC = New York State Department of Environmental Conservation.
- PCB = Polychlorinated biphenyl.
- R = The data is unusable.
- SB = Site background.
- SB = Subsurface soil sample.
- TAL = Target Analyte List.
- TCL = Target Compound List.
- U = The analyte was analyzed for but not detected at the value reported.
- UJ = The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.
- µg/Kg = Micrograms per kilogram.
- 520 J** Shaded cells with bold exceed the NYSDEC screening value (except for metals).

Table 3.3-3 Analytical Data Summary of Detected Analytes for Surface Water Samples from the Georgia Pacific/NYS Canal Corporation Site

Analyte	NYSDEC CLASS D (1)	Sample ID: Date:	GPS-SW02 10/9/2003	GPS-SW03 10/9/2003	GPS-SW03/D 10/9/2003	GPS-SW04 10/9/2003	GPS-SW05 10/9/2003
TCL Semivolatile Organic Compounds (µg/L)							
Benzaldehyde	NA		10 U	10 U	10 U	3 J	10 U
Caprolactam	NA		10 U	10 U	10 U	96	39
TCL Pesticide and PCBs (µg/L)							
Aroclor-1242	0.000001 for H(FC)		1 U	1 U	1 U	1.1 J	1 U
TAL Metals and Mercury (µg/L)							
Aluminum	NA		48.3 B	216	256	3750	3560
Arsenic	340 for A(A)		5.8 U	5.8 U	5.8 U	5.8 U	16.4
Barium	NA		33.7 B	15 B	15.7 B	232	216
Beryllium	NA		0.1 U	0.1 U	0.1 U	0.28 B	0.27 B
Cadmium	CV		0.7 U	0.7 U	0.7 U	3.9 B	4 B
Calcium	NA		98000	18100	18100	121000	86500
Chromium	CV		1 U	1 U	12.8	24.8	45.1
Cobalt	110for A(A) (g)		1.3 U	1.3 U	1.3 U	2.4 B	5.1 B
Copper	CV		1 B	3.7 B	4.1 B	24.1 B	36.1
Iron	300 for A(C)		1190	597	886	14500	38400
Lead	CV		2.2 U	2.2 U	2.2 U	79.7	316
Magnesium	NA		27600	5440	5430	18800	17900
Manganese	NA		280 J	54.2 J	65.2 J	608 J	819 J
Nickel	CV		2.3 U	2.3 B	9.8 B	8 B	18.4 B
Potassium	NA		111 B	1690 B	1730 B	10100	6790
Selenium	NA		3.8 U	3.8 U	3.8 U	13.2	84.6
Sodium	NA		2820 B	6210	6130	16600	58200
Vanadium	190 for A(A)		0.9 U	3 B	3 B	55.7	23.6 B
Zinc	CV		25.6 J	39 J	34.5 J	185 J	361 J
Mercury	0.0007 for H(FC)		0.1 U	0.1 U	0.1 U	0.25	0.31
Anions (mg/L)							
Chloride	NA		1.46	9.69	9.56	27.1	89.2
Fluoride	CV		0.176	0.083 J	0.107	0.0973 J	0.103
Sulfate	NA		6.19	17.1	16.8	37.5	21.1
Hardness (mg/L)							
Hardness (As CaCO ₃)	NA		500	145	165	480	400

Table 3.3-3 Analytical Data Summary of Detected Analytes for Surface Water Samples at the Georgia Pacific Site

(1) New York State Department of Environmental Conservation, Technical and Operational Guidance Series #1.1.1: Class D Ambient Water Quality Standards and Guidance Values and Groundwater Effluent Limitations, 1998.

(g) Guidance value used.

Key:

- A(A) = Standard/guidance value is for the protection of fish survival (fresh waters).
- A(C) = Standard/guidance value is for the protection of fish propagation (fresh waters).
- B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.
- CV = Value calculated based on hardness as per NYSDEC TOGS 1.1.1, 1998.
- /D = Duplicate sample.
- GPS = Georgia Pacific Site.
- H(FC) = Standard/guidance value is for the protection of human consumption of fish (fresh waters).
- J = The reported value is an estimated quantity.
- JN = The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.
- mg/L = Milligrams per liter.
- NA = Not applicable/available.
- NYSDEC = New York State Department of Environmental Conservation.
- PCB = Polychlorinated biphenyl.
- SW = Surface water sample.
- TAL = Target Analyte List.
- TCL = Target Compound List.
- U = The analyte was analyzed for but not detected at the value reported.
- UJ = The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.
- H(FC) = Standard/guidance value is for the protection of wildlife (fresh waters).
- µg/L = Micrograms per liter.
- 1.1 J** Shaded cells with bold exceed the NYSDEC Class D Standard or Guidance Value (except for metals).

Table 3.3-4 Analytical Data Summary of Detected Analytes for Sediment Samples from the Georgia Pacific Site

Analyte	NYSDEC Screening Criteria (1), (2)	Sample ID: Date:	GPS-SE01 10/9/03	GPS-SE02 10/9/03	GPS-SE03 10/9/03	GPS-SE04 10/9/03	GPS-SE05 10/9/03
TCL Volatile Organic Compounds (µg/Kg)							
1,1,2-Trichloro-1,2,2-Trifluoroethane	NA		14 U	3 J	3 J	36 UJ	8500 U
Carbon Disulfide	NA		14 UJ	15 UJ	38 UJ	3 J	8500 U
Methyl Acetate	NA		14 U	15 U	38 UJ	10 J	15000 J
TCL Semivolatile Organic Compounds (µg/Kg)							
Acetophenone	NA		500 U	510 U	1100 UJ	230 J	1500 UJ
Benzaldehyde	NA		500 U	510 U	1100 UJ	1000 UJ	330 J
Benzo(b)fluoranthene	NA		500 U	510 U	1100 UJ	1000 UJ	310 J
Benzo(k)fluoranthene	NA		500 U	510 U	1100 UJ	1000 UJ	340 J
Bis(2-Ethylhexyl)Phthalate	CV		500 U	510 U	1100 UJ	1000 UJ	980 J
Chrysene	NA		500 U	510 U	1100 UJ	1000 UJ	420 J
Di-n-octylphthalate	NA		500 U	510 U	1100 UJ	1000 UJ	1500 J
Fluoranthene	CV		500 U	510 U	1100 UJ	1000 UJ	1100 J
Phenanthrene	CV		500 U	510 U	1100 UJ	1000 UJ	380 J
Pyrene	CV		500 U	510 U	1100 UJ	1000 UJ	760 J
TCL Pesticide and PCBs (µg/Kg)							
Aroclor-1248	CV		50 U	51 U	110 UJ	310 J	1600 J
Aroclor-1260	CV		50 U	51 U	110 UJ	100 UJ	180 J
beta-BHC	CV		2.6 U	2.6 U	5.7 UJ	5.3 UJ	19 R

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Table 3.3-4 Analytical Data Summary of Detected Analytes for Sediment Samples from the Georgia Pacific Site

Analyte	NYSDEC Screening Criteria (1)		Sample ID:	GPS-SE01	GPS-SE02	GPS-SE03	GPS-SE04	GPS-SE05
	Lowest Effect (2)	Severe Effect (2)	Date:	10/9/03	10/9/03	10/9/03	10/9/03	10/9/03
TAL Metals and Mercury (mg/Kg)								
Aluminum	NA	NA		7680	7890	6670	2760	3170
Arsenic	6.0	33		3.7	4.2 J	2.9 BJ	1.7 U	1.8 U
Barium	NA	NA		64.3	78.4	80.2	69 B	51.9 B
Beryllium	NA	NA		0.49 B	0.46 B	0.49 B	0.21 B	0.25 B
Cadmium	0.6	9		0.14 U	0.15 U	0.2 U	0.69 B	4.9
Calcium	NA	NA		42500	23200	3030	24100	3200
Chromium	26	110		11.1	10.2	8.6	18.7	65.4
Cobalt	NA	NA		8.6 B	7 B	5.4 B	2.4 B	4.2 B
Copper	16	110		20.3	18.1	18.1	9.5 B	25.4
Iron	20000	40000		18200	17500	9090	8970	16300
Lead	31	110		9.6	8	18.8	24	183
Magnesium	NA	NA		15400	10200	2370	1260 B	1140 B
Manganese	460	1100		461	311	137	144	169
Nickel	16	50		18.9	16.6	12.6 B	5.9 B	11.9 B
Potassium	NA	NA		1040 B	752 B	549 B	344 B	286 B
Selenium	NA	NA		0.55 U	0.56 U	0.85 B	0.74 U	1.7 B
Vanadium	NA	NA		16.3	17	25.5	17.9 B	21.1
Zinc	120	270		49.2	48.6	111	48.1	138
Mercury	0.15	1.3		0.07 U	0.07 U	0.1 U	0.1 U	0.42
Total Cyanide (mg/Kg)								
Cyanide	NA	NA		0.18 U	0.23 U	0.43 U	0.71 U	5.7
Total Organic Carbon (mg/Kg)								
Total Organic Carbon	NA	NA		17000	10000	92000	120000	110000
Percent Solids (%)								
Percent Solids	NA	NA		67	52	28	17	20

Table 3.3-4 Analytical Data Summary of Detected Analytes for Sediment Samples from the Georgia Pacific Site

(1) New York State Department of Environmental Conservation, Division of Fish, Wildlife and Marine Resources, Technical Guidance for Screening Contaminated Sediments, 1999. The benthic aquatic life chronic toxicity protection level was used.

(2) As per the 1999 NYSDEC Guidance, the screening criteria for organic contaminants in sediments are calculated based on sample Total Organic Carbon concentration. However, two levels of risk are established for metals contamination in sediments (LowerstEffect Level and Severe Effect Level).

Key:

- B = The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.
- CV = Value calculated based on total organic carbon as per NYSDEC Guidance.
- /D = Duplicate sample.
- GPS = Georgia Pacific Site.
- J = The reported value is an estimated quantity.
- JN = The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.
- mg/Kg = Milligrams per kilogram.
- NA = Not applicable/available.
- NYS = New York State.
- NYSDEC = New York State Department of Environmental Conservation.
- PCB = Polychlorinated biphenyl.
- R = The data is unusable.
- SE = Sediment sample.
- TAL = Target Analyte List.
- TCL = Target Compound List.
- U = The analyte was analyzed for but not detected at the value reported.
- UJ = The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.
- µg/Kg = Micrograms per kilogram.
- % = Percent.
- = Sample was not analyzed for this parameter.

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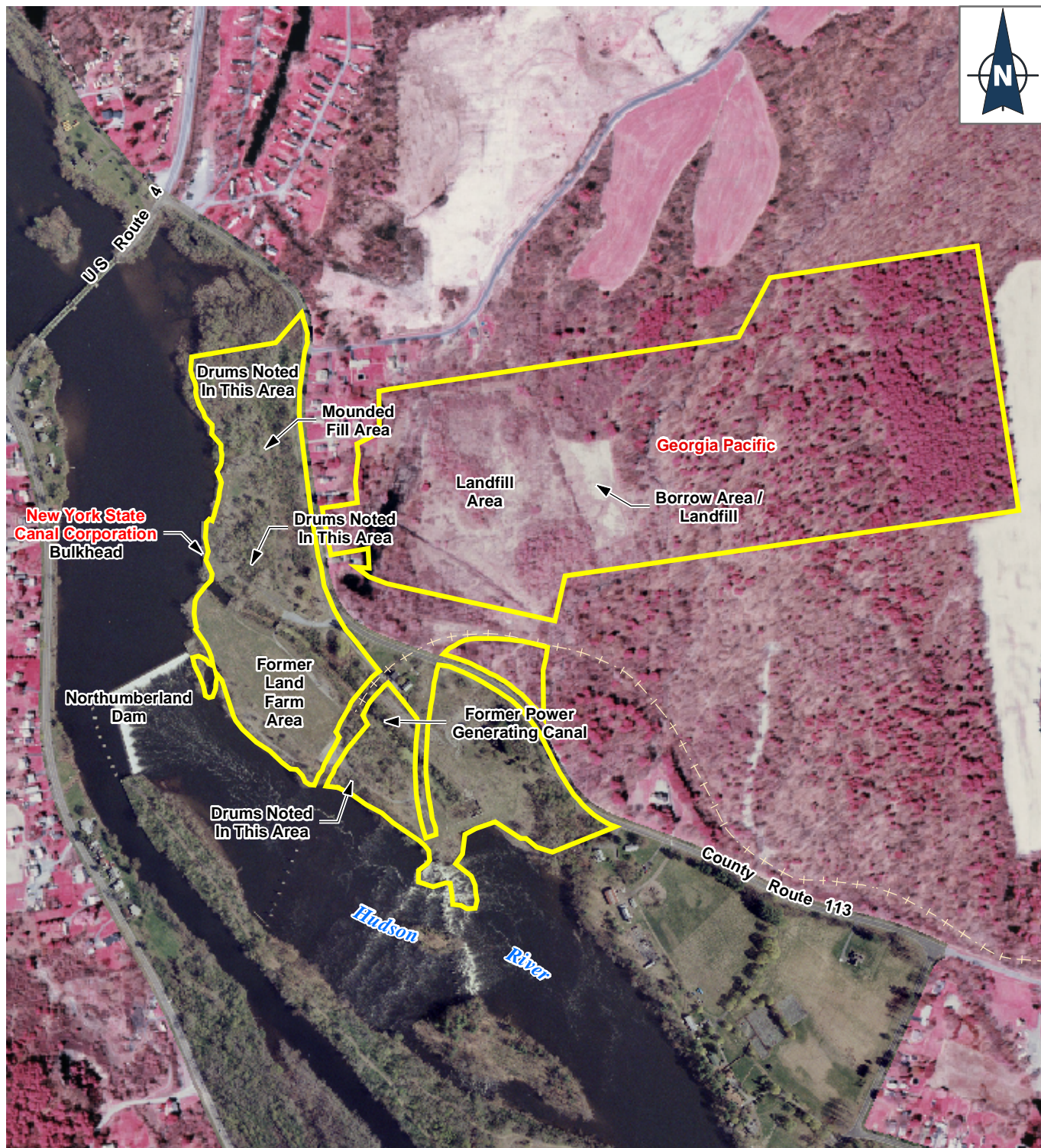
Shaded cells with bold exceed the NYSDEC guidance value (except for metals).

Table 3.3-5 Analytical Data Summary of Detected Analytes for Groundwater Samples from Temporary Wells at the Georgia Pacific/NYS Canal Corporation Site

Analyte	NYSDEC Class GA (1)	Sample ID: Date: EPA MCLs (2)	GPS-GP01-GW	GPS-GP02-GW	GPS-GP03-GW	GPS-GP04-GW	GPS-GP05-GW	GPS-GP06-GW	GPS-GP07-GW	GPS-GP08-GW
			10/13/2003	10/14/2003	10/14/2003	10/14/2003	10/13/2003	10/14/2003	10/14/2003	10/13/2003
TCL Volatile Organic Compounds (µg/L)										
1,1,2-Trichloro-1,2,2-Trifluoroethane	5	NA	10 U	10 U	10 U	10 U	0.9 J	10 U	10 U	10 U
TCL Semivolatile Organic Compounds (µg/L)										
Caprolactam	NA	NA	10 U	10 U	10 U	10 U	280	10 U	10 U	1400
TAL Metals and Mercury (µg/L)										
Aluminum	NA	50-200 (s)	91.9 B	82.2 B	56.8 B	57.5 B	50.4 B	68.8 B	57.9 B	67.3 B
Barium	1000	2000	176 B	39.4 B	57.6 B	35.5 B	110 B	26.6 B	87.3 B	39.5 B
Calcium	NA	NA	66900	104000	131000	210000	119000	48800	102000	85600
Chromium	50	100 (4)	4.3 B	1.4 B	29.6	1 U	1 U	1 U	3.1 B	1 U
Cobalt	NA	NA	13.2 B	1.3 U	2.7 B	18.7 B	5.7 B	4.7 B	4.5 B	4.6 B
Copper	200	1300 (a)	1 U	1 U	5.9 B	1 U	1 U	1.1 B	1 U	1 U
Iron	300 (3)	300 (s)	101000	395	5040	9790	3040	27.9 U	2140	94.3 B
Magnesium	35000 (g)	NA	19000	11000	35800	44300	25100	4040 B	22200	16000
Manganese	300 (3)	50 (s)	2140 J	122 J	426 J	7610 J	1600	196 J	394 J	603 J
Nickel	100	NA	9 B	4.6 B	16.1 B	7.3 B	4.6 B	2.3 U	2.3 U	3 B
Potassium	NA	NA	2590 B	2590 B	2690 B	3620 B	11100 J	3170 B	3840 B	1390 B
Selenium	10	50	3.8 U	5.8	3.8 U	3.8 U	5.1 J	3.8 U	3.8 U	3.8 U
Sodium	20000	NA	9660	5240	46100	9830	35000 J	10400	69300	5660
Vanadium	NA	NA	3.8 B	1.8 B	0.9 U	0.9 U	0.9 U	1.2 B	0.9 U	0.9 U
Zinc	2000 (g)	5000 (s)	38.1 J	39.3 J	27.1 J	24.8 J	28.1	27.4 J	20.2 J	26.6 J

Table 3.3-5 Analytical Data Summary of Detected Analytes for Groundwater Samples from Temporary Wells at the Georgia Pacific Site

Effluent Limitations, 1998.	
(2) EPA National Primary and Secondary Drinking Water Standards, 2002.	
(3) Screening value is for sum of Iron and Manganese is 500 µg/L.	
(4) Screening value for total chromium.	
(a) Action level is used in lieu of MCL.	
(g) Guidance value used.	
(s) Secondary standard used.	
Key:	
B =	The reported value was less than the Contract Required Detection Limit but greater than or equal to the Instrument Detection Limit.
/D =	Duplicate sample.
EPA =	Environmental Protection Agency.
GP =	Boring.
GPS =	Georgia Pacific Site.
GW =	Groundwater sample.
J =	The reported value is an estimated quantity.
JN =	The presence of the analyte has been "tentatively identified". The associated numeric value represents the estimated concentration.
MCL =	Maximum Contaminant Level.
NA =	Not applicable/available.
NYSDEC =	New York State Department of Environmental Conservation.
PCB =	Polychlorinated biphenyl.
TAL =	Target Analyte List.
TCL =	Target Compound List.
U =	The analyte was analyzed for but not detected at the value reported.
UJ =	The analyte was analyzed for but not detected. The reported quantitation limit is approximate and may be inaccurate.
µg/L =	Micrograms per liter.
- =	Analyte was not analyzed for.



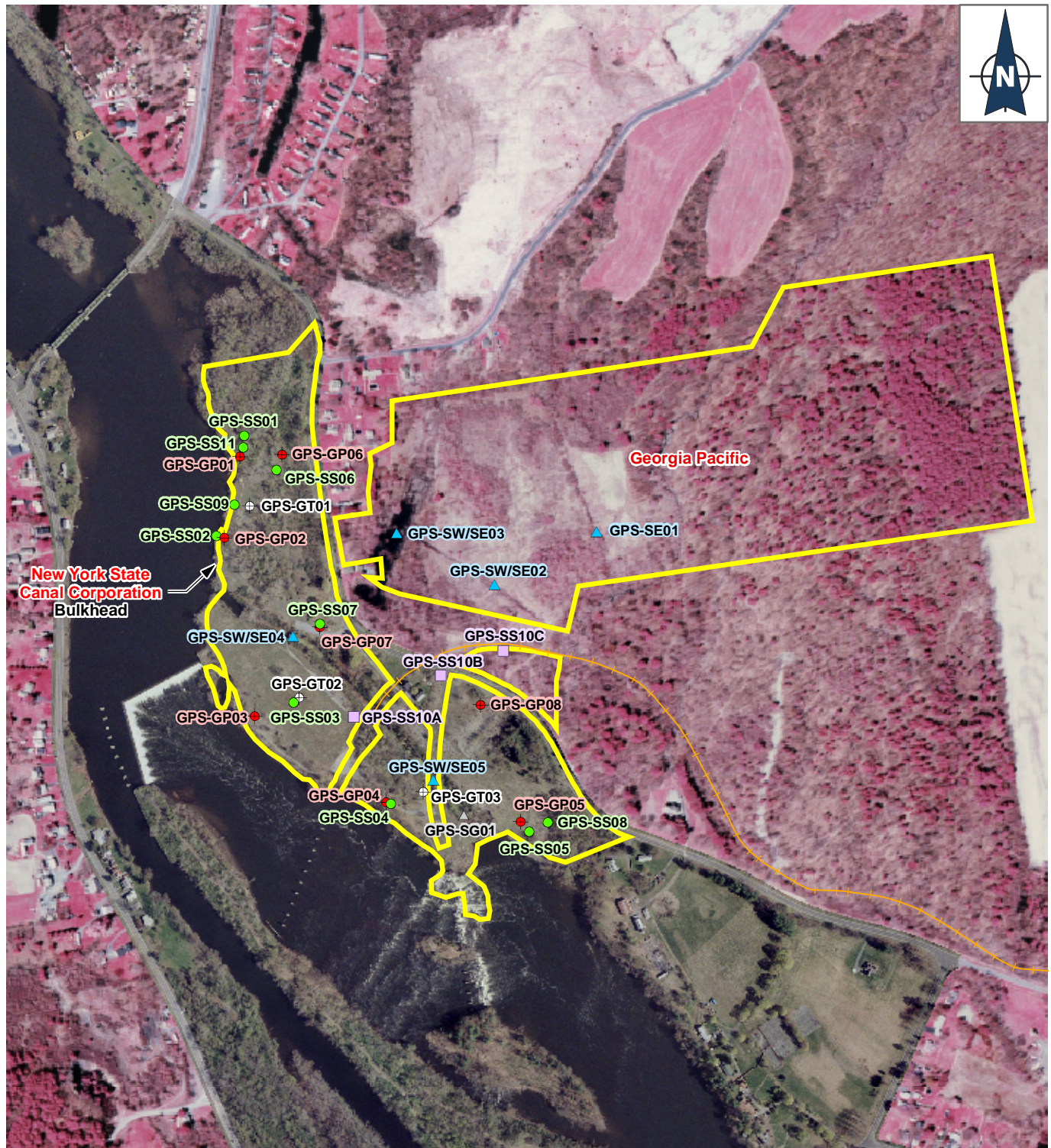
LEGEND

- Approximate Site Boundary
- Tax Parcel Boundary
- Abandoned Railroad

Hudson River
PCBs SUPERFUND SITE

Figure 2-1
Key Site Features
Georgia Pacific / New York State Canal Corporation



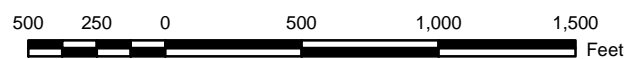


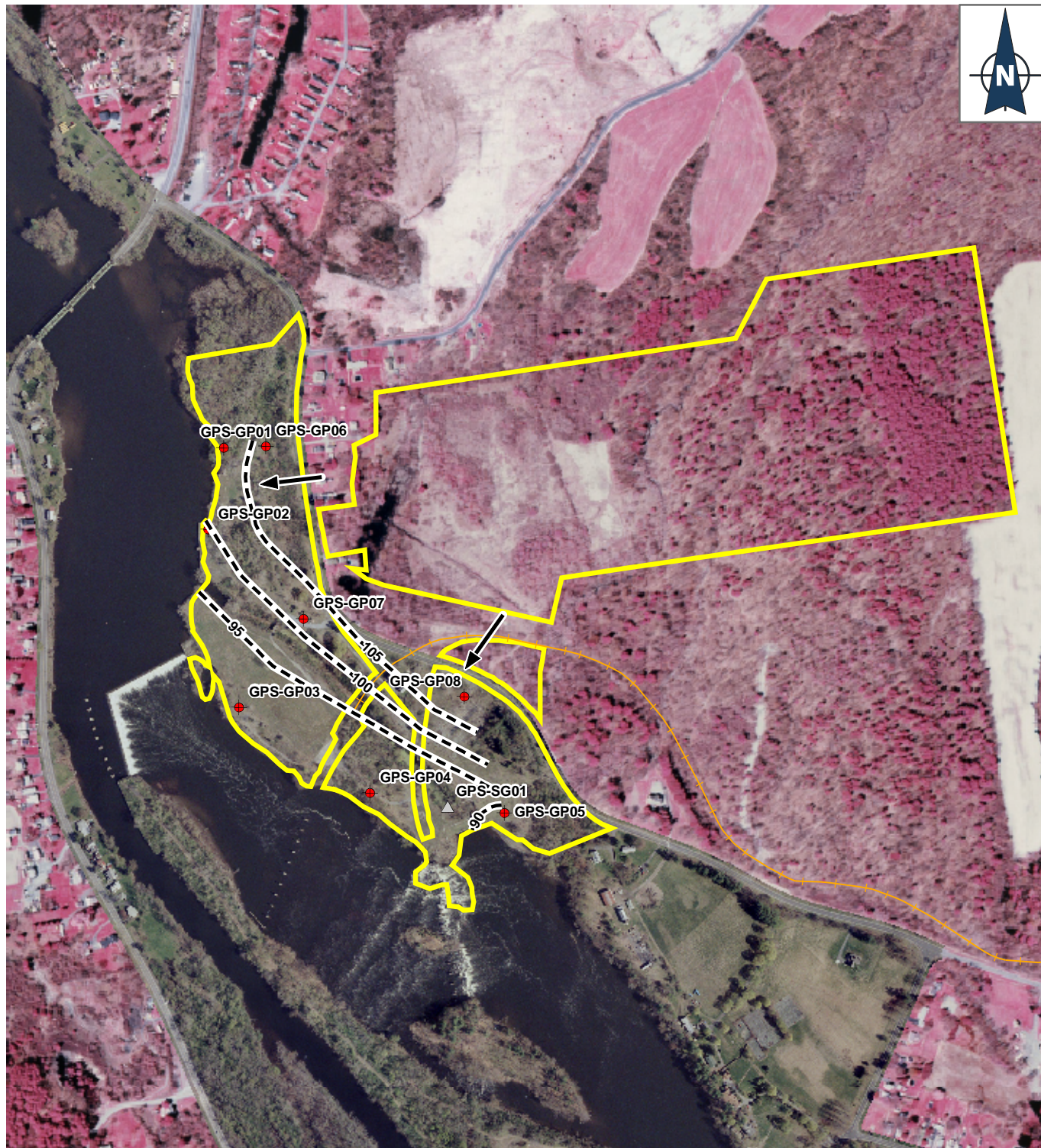
LEGEND

- Geoprobe Soil Boring
- Geoprobe Soil Boring & Temporary Well
- Geoprobe & Geotechnical Boring
- Geotechnical Boring
- Surface Soil
- Soil Sample Adjacent to Railroad
- Surface Water / Sediment
- Stream Gauge
- Railroads
- Potential Site Boundary

Hudson River
PCBs SUPERFUND SITE

Figure 3-1
Sample Locations
Georgia Pacific / New York State Canal Corporation





LEGEND

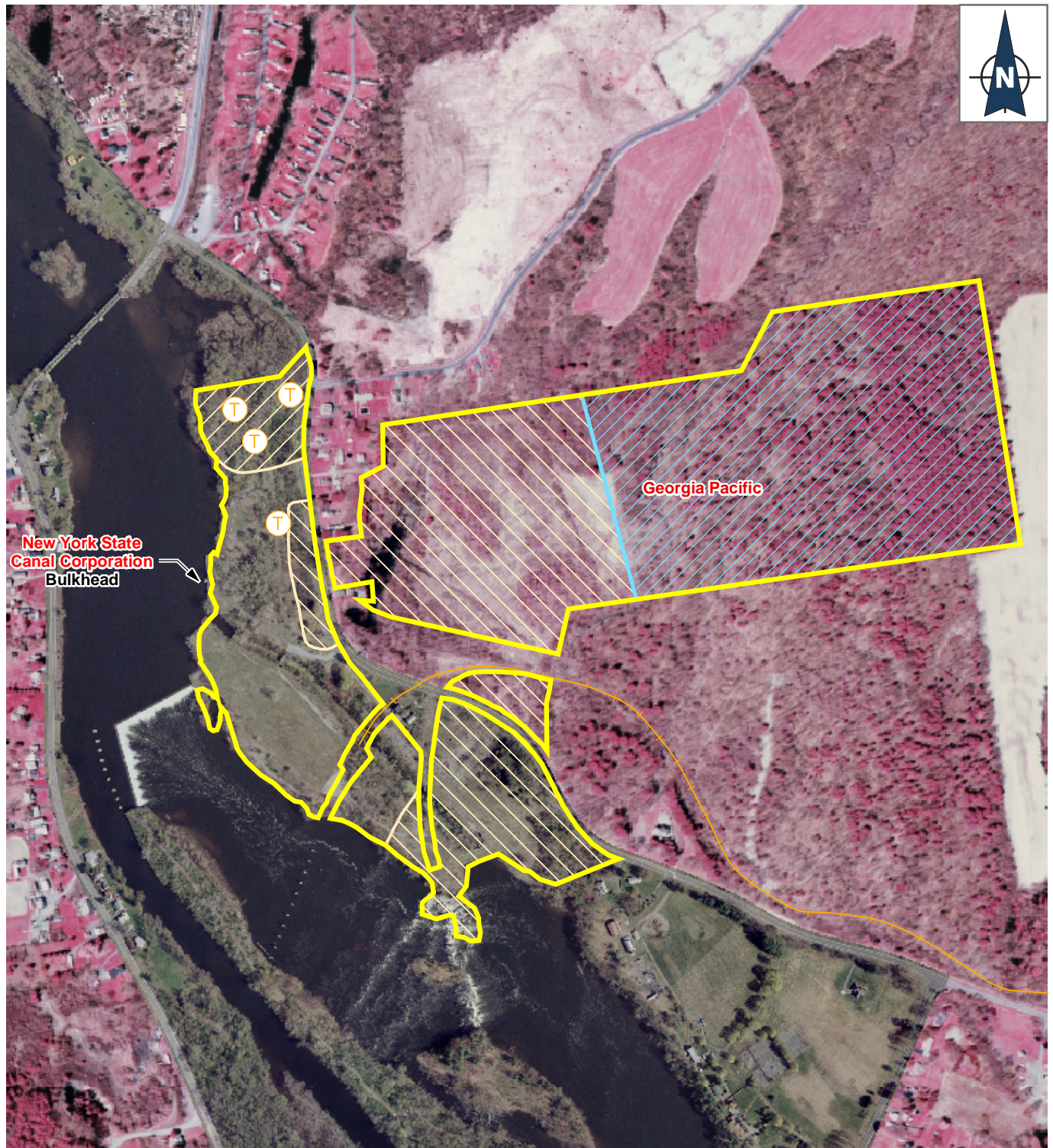
- Groundwater Contour
- Temporary Well
- △ Stream Gauge
- - - Railroad
- Potential Site Boundary
- Direction of Groundwater Flow

Water Level Elevations Measured on 11/6/2003
5 ft. Contour Interval

Hudson River
PCBs SUPERFUND SITE

Figure 3-2
Overburden Groundwater Contour Map
Georgia Pacific / NYS Canal Corporation

500 250 0 500 1,000
Feet



LEGEND

- Potential Site Boundary
- Potential Excluded Area

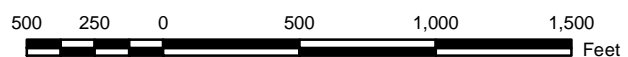
Archaeological Testing Method

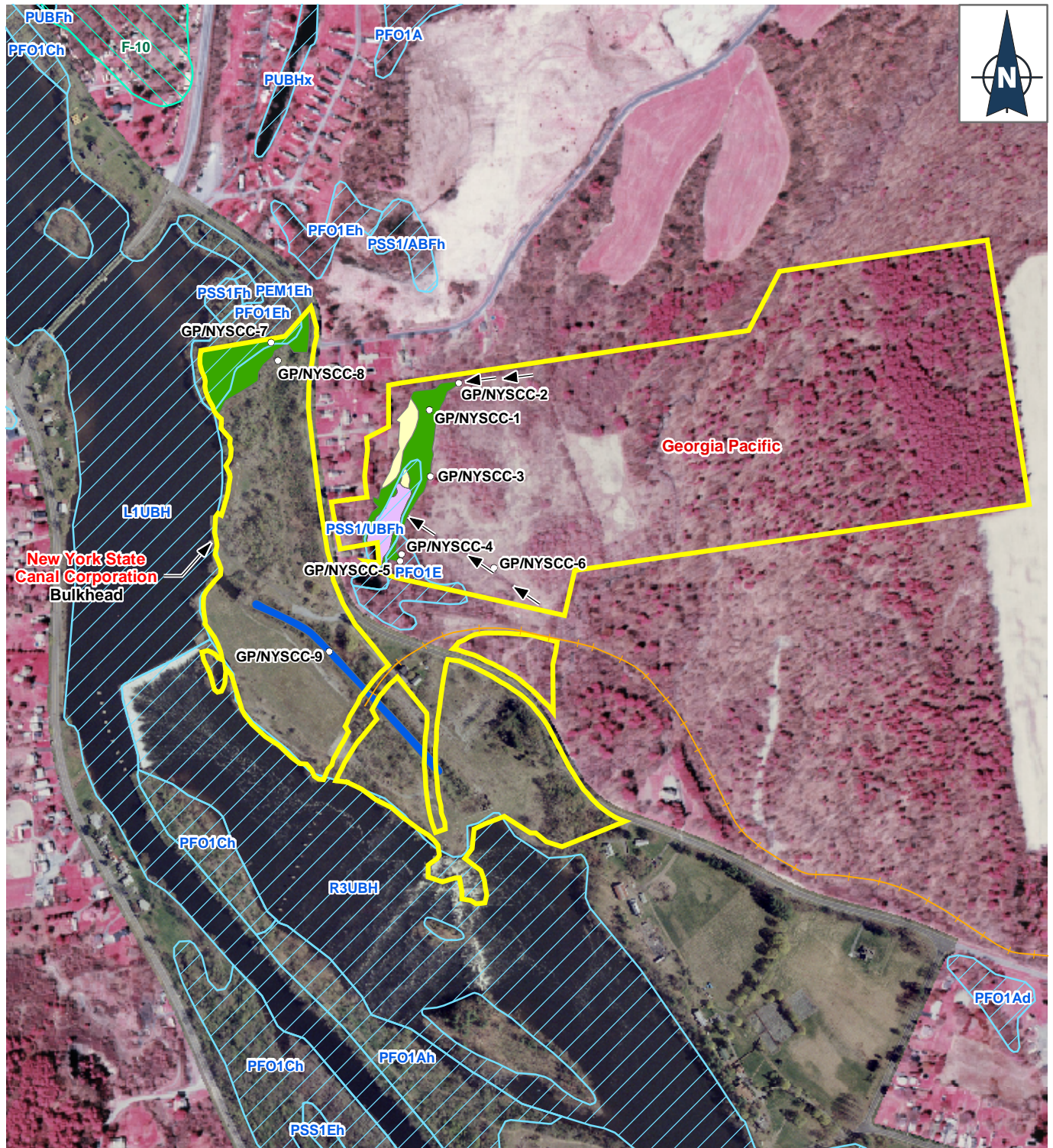
- Backhoe Test
- Shovel Test
- Backhoe & Shovel Test
- T Backhoe Trench Locations

¹ Limited Shovel Testing in Area of Former Landfill

Hudson River
PCBs SUPERFUND SITE

Figure 6-1
Field Sampling Areas¹
Phase I B Cultural Resources Investigation
Georgia Pacific / NYS Canal Corporation





LEGEND

- ▬ NYS DEC Mapping
- ▬ National Wetland Inventory Mapping

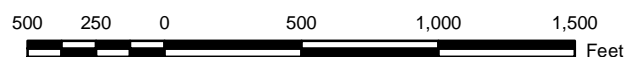
Delineated Wetlands

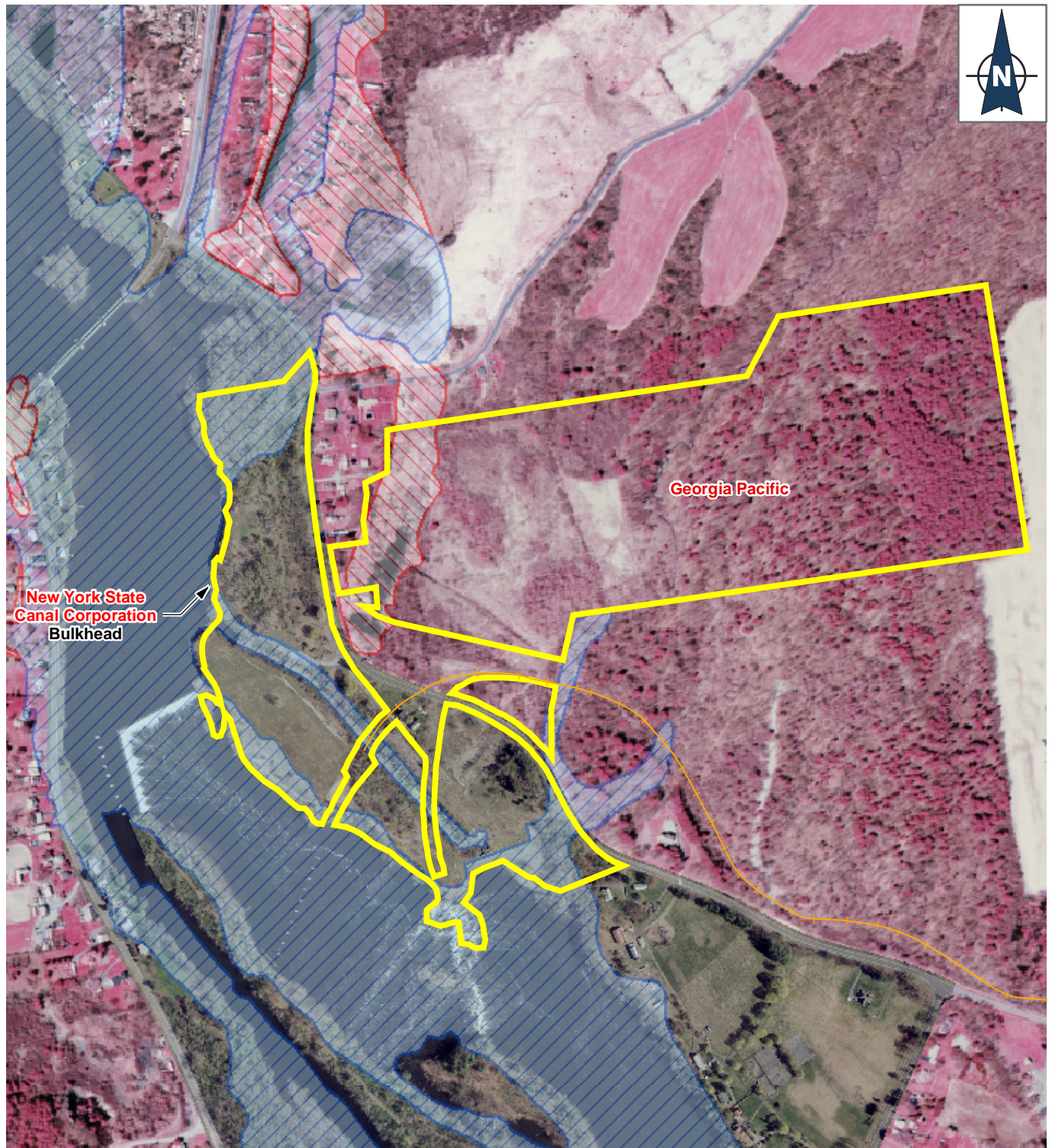
- Emergent
- Open Water / Emergent / Scrub-Shrub
- Forested
- Open Water / Emergent

- Observation Plots
- ▬ Direction of Drainage Flow

Hudson River
PCBs SUPERFUND SITE

Figure 7-1
Wetland Locations
Georgia Pacific / New York State Canal Corporation



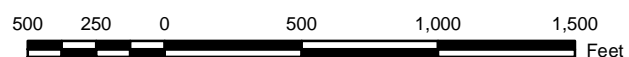


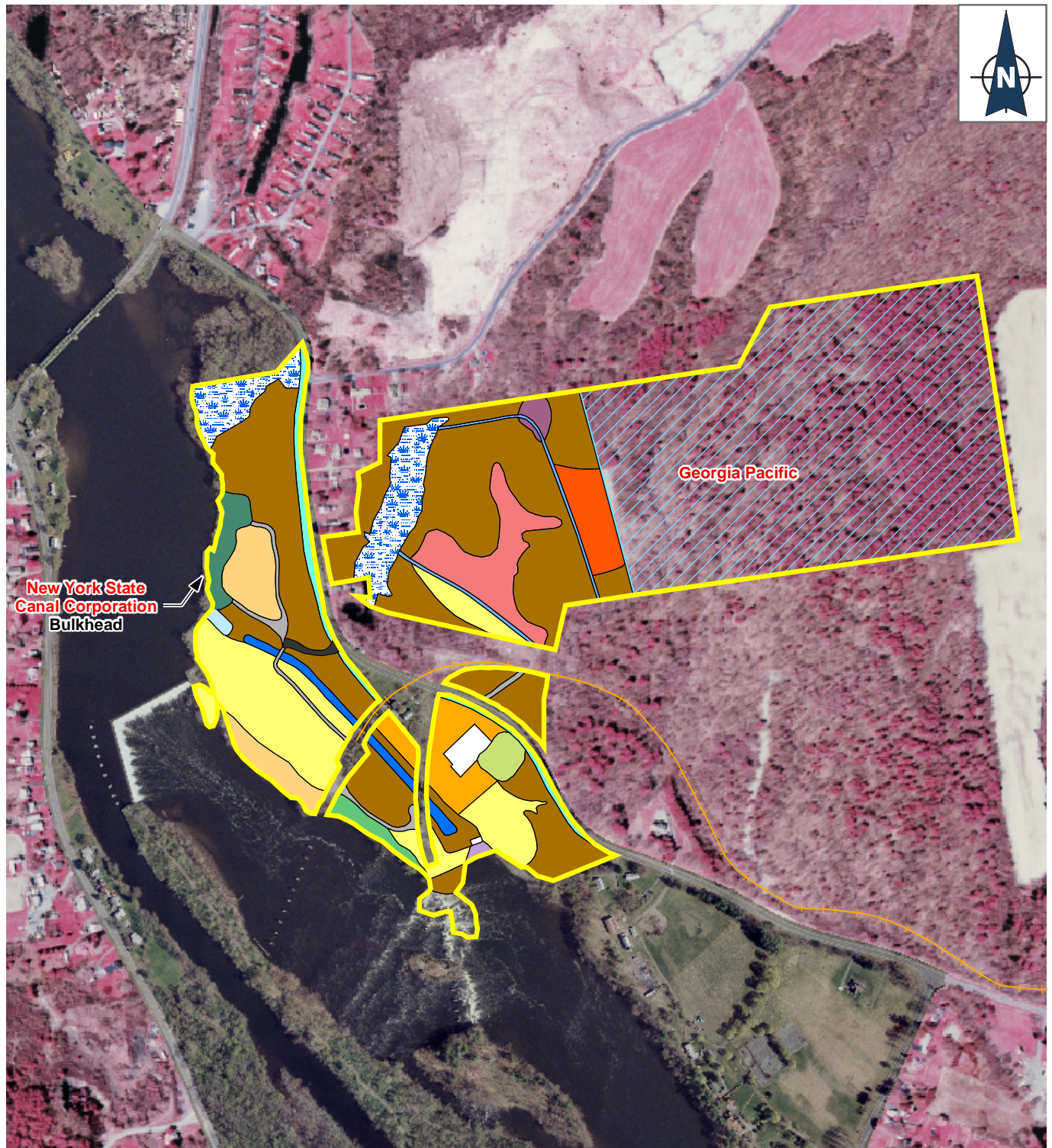
LEGEND

- Potential Site Boundary
- Tax Parcels
- FEMA Floodplain**
 - 100 Year Floodplain
 - 500 Year Floodplain

Hudson River
PCBs SUPERFUND SITE

Figure 8-1
FEMA Floodplain Mapping
Georgia Pacific / New York State Canal Corporation





Ecological Communities

- | | |
|---------------------------------------|----------------------------------|
| Paved Road | Appalachian Oak-Pine Forest |
| Unpaved Road | Pine / Spruce Plantation |
| Wetland | Backwater Slough |
| Successional Northern Hardwoods (SNH) | Ditch |
| Successional Old Field (SOF) | Canal |
| Successional Shrubland (SS) | Landfill |
| SNH / SS | Rural Structure Exterior |
| SOF / SS | Mine / Artificial Cave Community |
| Appalachian Oak-Hickory Forest | Mowed Roadside / Pathway |
| | Mowed Roadside |
| | Potential Excluded Area |

Hudson River
PCBs SUPERFUND SITE

Figure 10-1
Site Ecological Communities
Georgia Pacific /
New York State Canal Corporation

500 250 0 500 1,000
Feet